MANUFACTURERS RECORD

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No group can improve its standards of living except at the expense of other groups unless, by increased productivity, it adds in proportion to the material income of the nation.

Give us Hard, Fast Work

For twenty-four years we have designed, built and equipped important factories.

Recently we finished a huge Government plant three months ahead of time, saving our customer a million dollars.

If you need help, we have adequate personnel. References on request.

The H.K. Ferguson Co.

ENGINEERS AND BUILDERS

CLEVELAND • NEW YORK

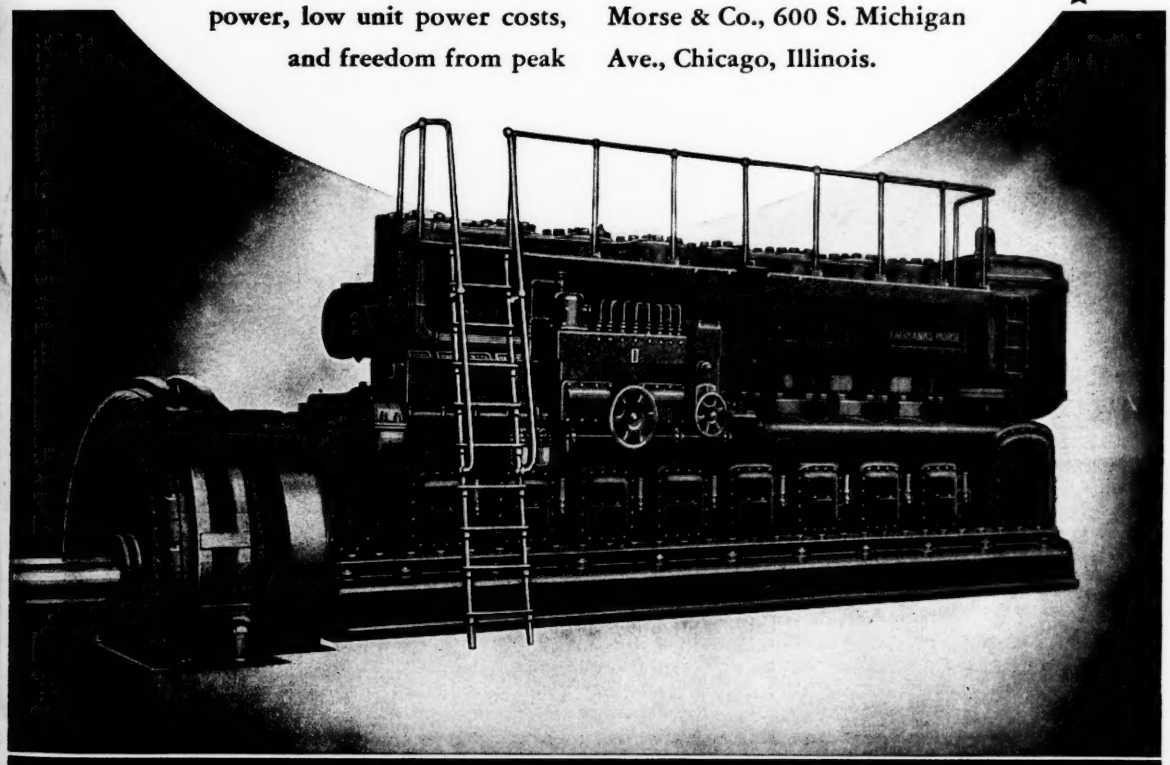
XUM

POWER

for High-priority Jobs

Do you need extra power to meet war production schedules? Then use your priority to buy Fairbanks-Morse Diesel-generators. They will assure you of uninterrupted power, low unit power costs, and freedom from peak penalties . . . not only now, but in the future, too.

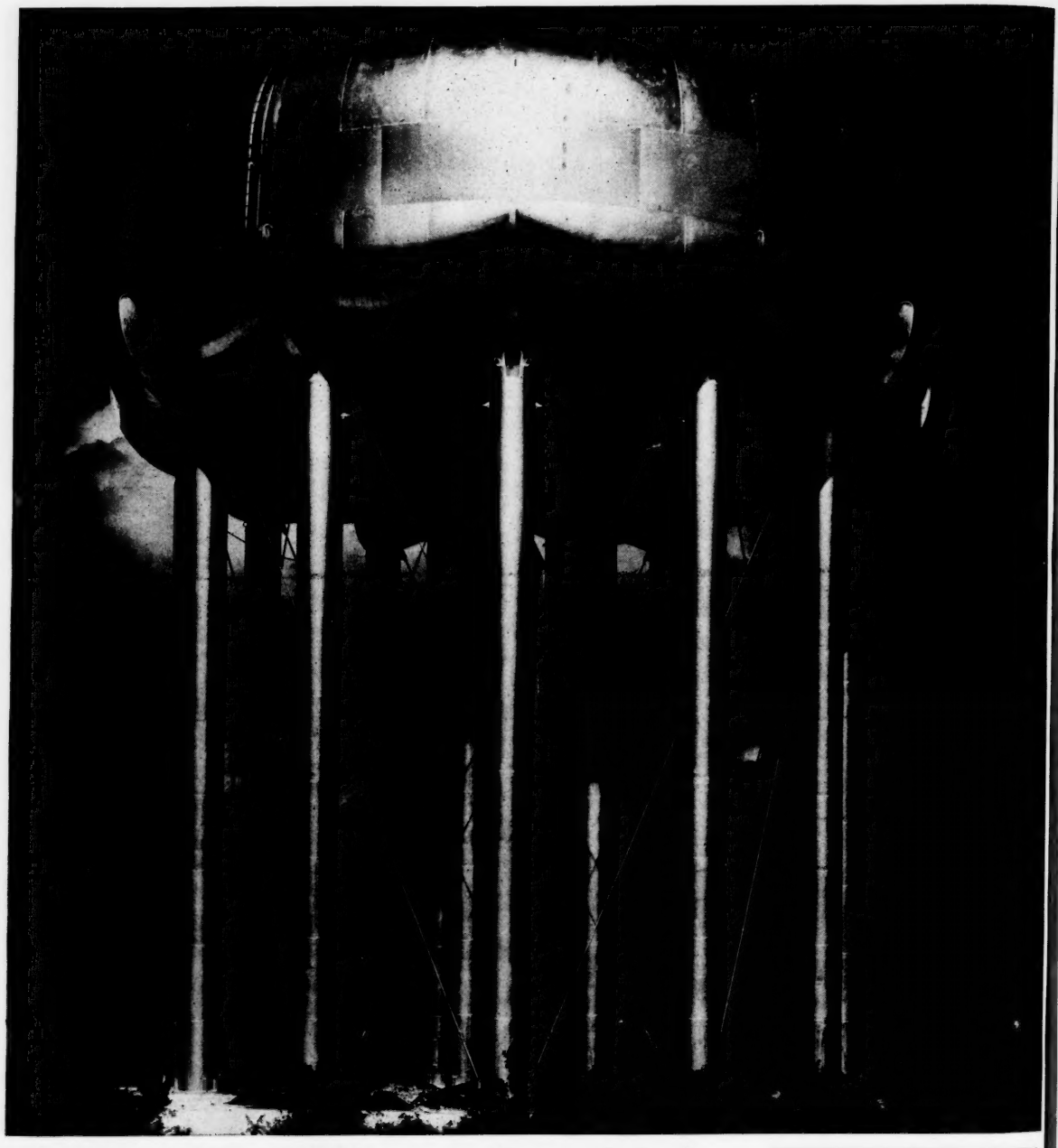
F-M power engineers, unbiased because the line includes all types and sizes, are ready to study your needs. Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago, Illinois.



FAIRBANKS-MORSE

DIESELS
MOTORS
SCALES
PUMPS

XUM



ELEVATED WATER TANKS are meeting peak loads

Thanks to the progressive attitude of municipal waterworks officials, waterworks engineers, and waterworks operators, the water systems in Southern cities are, in general, modern, efficient and adequate to meet present needs. Many have large elevated storage tanks, like the 1,500,000-gal. installation shown above, to supply heavy drafts during peak load periods. This eliminates the need of increasing pumping rates just at the time when power is needed most for industrial production and assures a continuous supply for all purposes.

ELEVATED STEEL TANKS—Provide gravity water pressure for general service or fire protection. Bulletin entitled **RADIAL-CONE BOTTOM ELEVATED WATER TANKS** contains illustrations of tubular and structural column radial-cone tanks. This design used for capacities of 500,000 to 2,000,000 gals. for municipal service with 25 to 35 ft. range in head.

CHICAGO BRIDGE & IRON COMPANY

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B-953

Plants in BIRMINGHAM, CHICAGO and GREENVILLE, PA.

MANUFACTURERS RECORD

Established 1882

CONTENTS

AUGUST, 1942

Volume 111, Number 8

EDITORIALS

2 + 2 = 4 ..... Cover
Things that interest us 6
Selfishness—Government Problem No. 1 19

FEATURE ARTICLES

A Challenge to Business Leadership in the South by Roscoe Arant 20
A Pledge Fulfilled by Ernest E. Norris 22
War Uses of Farm Products by Dr. Henry G. Knight 24
A Cork Growing Industry for the South 26
America Produces Tanks 28
Scrap Rubber's Place in the War Economy 30
Airplane Parts Firm Cuts Accounting Costs 32
War Contracts and Allocations to Southern States Increase $1,249,578,000 During June 33
South's Construction Contracts High for 7-Month Period 34
New Industrial Plants and Expansions in the South During July 36
Sub-Contractors Wanted 38
New Priorities Put in Effect During July 39

DEPARTMENTS

New Methods and Equipment 44
Industrial News 46
Trade Literature 46
Index for Buyers 64
Index of Advertisers 66

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Member A. B. C.

Entered as second class matter at the postoffice, Baltimore, Md., U.S.A., under act of March 3, 1879. Volume 111, Number 8 Monthly.

A... Pneumatic Control System

for Marine Service

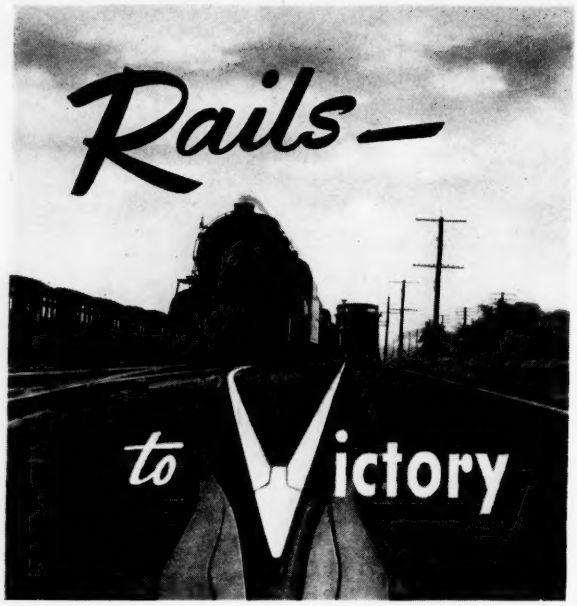
For application to any type of marine vessel, the Westinghouse Air Brake Company has evolved a distinctive pneumatic control system. By means of operating valves, piping, and air cylinders, it provides remote control, from either the engine room or bridge, for engine starting and stopping, throttle manipulation, and driving clutch engagement. All rods, levers, and linkage, common to mechanical control systems are eliminated. Operation is effortless. Action is prompt and positive, permitting quick change from forward to reverse. Manipulation is very flexible, giving precise control of engine throttle and boat speed. All devices are especially designed for marine service.

• • •

We also build air compressors and accessories, including the "Pneuphonic" signal horn, for shipbuilding yards, vessels, and harbors. Compressors are available for any type of drive—motor, steam, shaft, gas engine.

Westinghouse . . . .
AIR BRAKE CO.
Industrial Division
PITTSBURGH, PA.

Designers and manufacturers of pneumatic control equipment for 72 years.



Enemy No. I is having transportation troubles. He neglected his railroads. He could learn a lot from America.

He would learn what this nation knows: that mass railway transportation is vital to mass production and movement of war materials and mass movement of fighting men. He would learn that a vast network of 400,000 miles of steel rails crisscrosses and unites every part of this land. He would learn that over these rails, every hour of every day and night, is moving the greatest volume of the finest machines of war the world has ever known. He would learn something about the efficiency and coordination of the American railroads and the loyalty of their employees in performing the biggest transportation job in history.

Above all, he would learn that the power, the spirit and grim determination of America will win this war.

Norfolk and Western Railway

PRECISION TRANSPORTATION

COPR 1942 N. & W. RY

Things that interest us

IT is extremely difficult for any of us, no matter what our jobs may be, to take our minds off the war long enough to think and talk about the seemingly unimportant things that are happening daily to us personally and to us as members of a business or civic community. None-the-less it is essential to our national, as well as to our local well-being that each one of us direct his thoughts (and then his actions) along lines of constructive self-analysis and development.

We cannot help to win this war by being arm chair strategists. We can help to win the war by tending to our own business and tending to it harder than we ever did before. We can help to win the war by thinking honestly and unselfishly about our own problems and by carrying those thoughts out by actions that set an example for those around us.

THERE is an upheaval going on in the internal organizations of practically every business house in the country. Valued associates are leaving to join the services and their places are being filled by the advancement or transfer of others and by the employment of new men.

This upheaval of business personnel places a real job in the lap of the man who is responsible for his company's advertising policy. It will tax his ability and ingenuity because no matter how busy his firm may be now, it is his duty to see that during the war period his company's market is kept sold on his company's products. He must do this in spite of the fact that many of the people who will make up this market after the war must be sold, and not just resold or kept sold. These new men in new jobs must be educated as to the value of the products advertised while at the same time those same products must keep the good will of the men now familiar with them.

This is a real job that advertising faces, and it faces it right now. It is a job that should be well done by every company that markets its own products. It is a job which, if well done, will not only be invaluable to the individual company doing it when the war is over and the readjustment to peacetime conditions occurs, but it will help the nation bridge the chasm of industrial uncertainty that is bound to yawn between war and peace.

AS chairman of the WPB Mr. Donald Nelson has asked all Americans owning standard typewriters made since 1935 to sell them to the government. He says that more than 850,000 typewriters are needed by the Army, Navy, and Maritime Commission, for export to our Allies, and by government agencies. There are only about 2,000,000 standard typewriters in the hands of private industry and the general public.

This shortage of government-owned typewriters may prove to be a blessing in disguise. It may put a

stop to the growth of government "paper work" and eliminate some of the government "paper workers." It may even have a beneficial effect on congested housing conditions in Washington. Or is that too much to expect?

ALL of us who travel by rail, and in these days of gasoline and rubber shortage most of us do, cannot help but notice that the carrying of freight, express and mail is only one part of the railroads' business. The other is carrying passengers.

According to the railroads' own figures their passenger business for the first four months of this year was 88% greater than during the corresponding period in 1939 and 44% above the same period in 1941.

In addition to this greatly increased passenger traffic the railroads have moved 4,500,000 troops during the first five months of this year. This figure does not include soldiers traveling on leave or furlough. And these troop movements by rail in this country are made in passenger cars, not in "hommes 40, cheveaux 8"—freight cars to you of a younger generation.

DEHYDRATION and freezing of perishable foods are two of the many alternatives proposed to alleviate the food distribution problem caused by present and future restrictions on the use of the "tin" can.

Existing regulations permit the production of cans for packaging primary food items, especially those items for military and lend-lease usage, but both makers of packaged food and of food packages realize that conversion to other methods of packaging and types of packages are problems that are staring them in the face. Either dehydration or freezing means a complete revolution in the business of a canning company that adopts it.

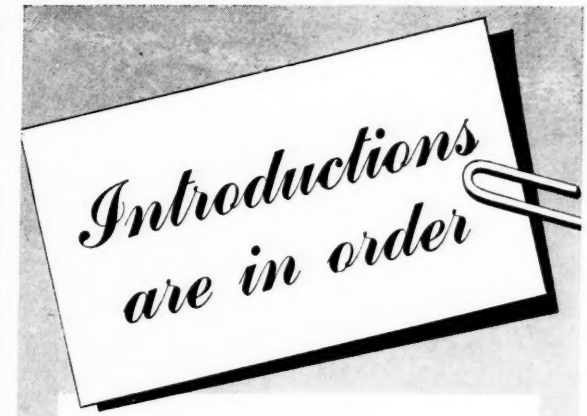
Misery loves company. When we think of our own problems let us also remember the "canner." His name is now a misnomer, for now he "can't."

THE Southeastern Greyhound Lines have found a way to overcome the handicap caused by a shortage of male clerical workers. They are employing mothers with young children for certain kinds of clerical work which can be done in the home. This work is delivered and, on its completion, is picked up by the bus company.

These home workers do not work on a schedule of regular hours. Each one of these special employees, many of whom were former employees of the bus company, keeps her own time record and does the work to suit her own convenience.

AS two powerful pressure groups, farmers and labor, play football with inflation while the administration acts as referee and congress as a disinterested spectator, all of us, farmers and labor included, who

(*Continued on page 8*)



"THE huge prospective storage of civilian goods and the large potential production facing idleness should be introduced to each other" says a recent issue of Banking, official publication of the American Bankers' Association.

"During the next few months," the magazine continues, "small businesses of every kind will come actually face to face with the day of reckoning about which a great deal has been said and little done.

"The saving of business whose existence is threatened by war conditions is mainly a job for each community concerned. The circumstances are different in every case and the treatment must fit the case.

"Nothing that has been done or is likely to be done by the Government to solve the problem can take the place of a vigorous and well-organized community effort to take care of itself."

For many years, the Industrial Development Department of the Southern Railway System has been diligently introducing the great productive capacity of the South to the nation. Having had plenty of practice at introducing, perhaps we can help in this pressing emergency. Certainly we will do our best, if you will communicate with—

RICHARD W. WIRT, *Ass't. Vice President*
In Charge of Industrial and Agricultural Development
Washington, D. C.

SOUTHERN
RAILWAY SYSTEM

ATTENTION, INDUSTRY!

TODAY, IN OUR RACE against TIME, industrial expansion requires rapid, dependable and accurate planning.

EXPANDING INDUSTRY is finding in the Coastal Southeast the vital, time-saving elements which the present situation demands.

THE COAST LINE'S DEVELOPMENT SERVICE has the essential information concerning the Southeast which expanding industry needs.

For complete and confidential data, write, telegraph or call:

J. H. Hatcher
Manager Development Service
Wilmington, N. C.

ATLANTIC COAST LINE RAILROAD

Things that interest us

(Continued from page 7)

own life insurance policies, savings accounts and of course the war bonds that we are urged to buy as the safest investment on earth are being made unwitting and unwilling victims.

Inflation can be curbed if the price of raw materials is curbed, if wages and salaries are curbed and if profits are curbed. Inflation cannot be controlled unless all three of these are simultaneously controlled.

A SOUTH Carolina manufacturer whose specialty is the making of paper cones, parallel tubes, spools and other similar paper products, has developed a new quick method of forming the concrete piers used in many building projects. A patent covering this method has been applied for.

Description of the product explains that it is a "spiral wound laminated paper tube for use—in cantonment type construction work——. Principal advantage claimed is the elimination of costly form construction and heavy bracings needed on other types of concrete forms."

Despite its recent development, the tube has already been used in many government projects.

THE manager of a New Orleans hotel has recently advertised for twenty men sixty-five years of age or older to operate the passenger elevators in his hotel. Each elevator is to be equipped with a seat for its operator.

For the past few months this hotel has employed girls to operate its elevators, but night shift duty was not liked by the girls and their talkativeness was not liked by the management so elderly men operators are now to be tried.

In making this shift the manager expects to further the interests, not only of the hotel but also of three groups of people—the old men who need employment, the girls who are being given waitress training and the young men (the original elevator operators) who are being freed for better jobs at better wages in war industries.

A CANDY manufacturer who was eager to do his share in production for the war program has converted his plant and is now making shoe polish for the armed forces. He discovered that, while the ingredients for candy and shoe polish differ greatly, the same mixing and grinding machinery can be used in the manufacture of either product—but not at the same time.

THE situation with respect to silver is more of a disgrace to the government of the country than it ever has been before. It is possible that this situation is now so obvious to everyone that Congress may be goaded into some sort of corrective action.

Government hoarding of silver is bluntly and clearly described in the following editorial from the *New York Times* of August 4th:

"One of the strangest episodes of the war is Government hoarding of silver. That metal has come suddenly into great demand. It is needed as a substitute for copper, zinc and nickel. It is also needed for a wide variety of new war purposes. The use of silver bearings in airplanes, for example, makes possible increased speed and greater ability to withstand shock and vibration. Silver and its alloys go into the manufacture of shells, bombs, tanks, torpedoes, trucks and ships. So great is the present demand for the metal that the War Production Board has just issued orders severely rationing the amount of silver available for industrial purposes. And all this time the Government of the United States has in its vaults more than three billion ounces of unused silver—sixty times an average years production—of which it is making no use whatever.

"This remarkable situation is the result of the adoption by Congress of the Silver Purchase Act of 1934, which compelled the Treasury to buy silver—both domestic and foreign—until the monetary stocks of the United States consisted of one-third silver and two-thirds gold. The theoretical purpose of this law was 'to provide a wider backing' for American currency. Its actual purpose was, of course, to line the pockets of the silver States. For eight years—and in recent years over its own protest—the Treasury has been forced to buy and store underground gigantic quantities of an unneeded metal at prices far above the current market price. Now the unneeded metal suddenly has become immensely useful—not as a 'backing' for our currencies but for purposes of war. And the obviously sensible thing to do would be to release from the Treasury the vast stocks of metal which are being held for 'monetary' purposes which are a sham. But the Silver Senators say no.

"So we arrive at a situation in which the same Government that urges a patriotic public not to hoard sugar, not to hoard rubber, not to hoard gasoline, not to hoard useful goods of any kind, itself hoards a metal which is needed for planes and shells and tanks and ships. It is a fantastic situation. It could exist only in a bloc-dominated Capitol."

TOO much can not be written or said about the impending danger of inflation. Now that the program of war production is well under way, it is unquestionably the nation's most important domestic problem.

How will labor benefit by increased wages if the prices it must pay for food and clothes and rent increase twice as fast.

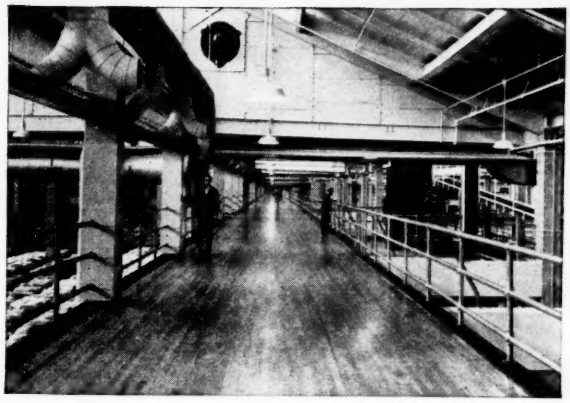
How will the farmer benefit if the urban dweller does not have enough money to buy the products of his farm?

How will business and industry exist without a sound foundation to its capital structure?

How will charitable institutions, hospitals, schools and colleges, for that matter the government itself operate without adequate income?

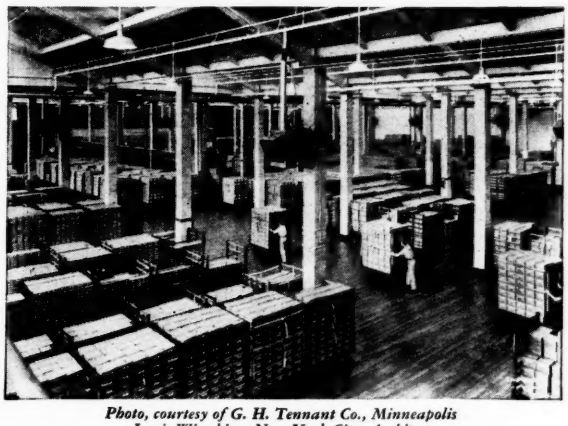
In short, what will happen to each and every one of us? And the answer is chaos and the loss of our democratic liberties.

The force of public opinion must be brought to bear on those members of our government, both legislative and executive, who are placing political expediency above national welfare. After elections it may be too late.



AT

National Biscuit Company, Atlanta



Photo, courtesy of G. H. Tennant Co., Minneapolis
Louis Wirsching, New York City, Architect

. . . 481,000 Feet of Spotless Maple Flooring

In its new Atlanta bakery, National Biscuit Company has assembled every aid to sanitary, uniform baking—including Maple Floors.

The bakers of "Ritz" know Hard Maple is easy to clean, because it's so compact and *smooth*. Its remarkably tight grain and tough fibre *retain* that smoothness through the years, and give it infinite capacity for taking punishment from loaded trucks and other traffic.

For employees, Maple's warm, resilient comfort retards fatigue, and its spic-and-span surface is a constant reminder of company standards of sanitation.

. . . Always, with Maple Floors, food plants foster cleanliness and better production—*decrease* upkeep, maintenance, and floor costs. *Ask your Architect.*

MAPLE FLOORING MANUFACTURERS ASSOCIATION
1797 McCormick Building, Chicago, Illinois

Floor *with*
MFMA Maple
REG. U. S. PAT. OFF.
(NORTHERN HARD)

An Emergency Statement

to Industrial Executives

Manufacturers—large and small—have a special opportunity to aid the war effort—over and beyond the contribution they are already making.

That opportunity is Salvage.

No matter how much scrap is dug out of the attics and basements of homes, the fence corners and gullies of farms, war production factories will still fall far short of the scrap material needed unless the manufacturers of America get 100 per cent behind the program.

Six million additional tons of scrap iron and steel alone, as well as vast quantities of rubber and other materials, are urgently required to bring our war program to full strength.

Whether you are a lace curtain manufacturer or a maker of drop forgings the obligation is the same.

The job is more than simply collecting scrap material around the plant, or turning in the scrap which is created on the premises. It is a job of condemning obsolete machinery, clearing out unusable stocks, obsolete tools, dies, drills, fixtures, etc.

All unusable material, equipment, and stocks should be scrapped at once and put back into war production.

The philosophy of "It may come in handy some day" must give way to the doctrine of "My country needs it now."

Patriotic volunteer committees of executives are already hard at work on this problem in 421 industrial centers.

The Industrial Section of the Conservation Division has a corps of technical advisers who are prepared to work with all types of industries.

A thoroughgoing Salvage program in a factory can not only help meet the present emergency, but can help prepare that factory for its postwar operations through the elimination of once wasteful practices.

1 The first thing to do is to put some one individual in charge of Salvage in all departments of your business and give him not only the responsibility to act, but the authority to act.

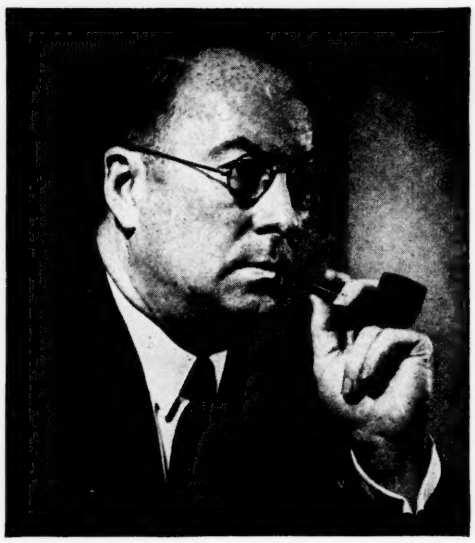
2 The next thing to do is to get in touch with your local Industrial Salvage Committee and map out a detailed program with the materials and ideas that are available. Their program contains 17 simple steps.

If in any doubt, write or wire at once to the Conservation Division, War Production Board, Railroad Retirement Building, Washington, D. C.

This job is being tackled by a democratic nation through the volunteer efforts and initiative of democratically managed industrial concerns, rather than through directives or compulsion as it is done in Axis countries.

Every executive, every superintendent, every foreman and every worker in every plant can help.

The main thing is to get started now.



All unusable material, equipment, and stocks should be scrapped at once and put back into war production. Please read this message and act **now.**

D. M. NELSON, CHAIRMAN, WAR PRODUCTION BOARD

This message approved by Conservation Division

WAR PRODUCTION BOARD

This advertisement paid for by the American Industries Salvage Committee (representing and with funds provided by a group of leading industrial concerns).

SCRAP FROM HOMES AND FARMS—As individuals, search your home from attic to basement. Search your garage. Look at the old familiar things in a new light. Do you need them—or can you get along without them? Your country needs every pound of scrap iron and steel, other metals, rubber, rags and burlap to provide the fighting materials our armed forces must have. Take your scrap to the nearest Salvage Depot—give it to a charity—or sell it to a Junk dealer. . . . If you live on a farm, consult your County War Board or your farm implement dealer. In any case, your scrap will flow back into the blood stream of our war production.

XUM

We WILL Win . . .

• Your first job now, like ours, is to help win the war. Most important for American industry is to back up our men on the fighting fronts—produce more and faster until we've won through to Victory. That's what the Gulf South is doing. Like the rest of the nation, we've rolled up our sleeves and are doing our utmost in this crisis.

We, here in the Gulf South, take pride in the part we are playing in our war program . . . a part made possible to a great extent by this area's rich resources, diversified raw materials, abundant, dependable Natural Gas fuel, mild year-round climate and a people anxious to utilize fully these industrial advantages for war. After the war is won—and we *will* win—these advantages can help your industry just as they are now helping Gulf South industry do a big job in our war program.

Consider Gulf South industrial advantages for your industry. Further information on the Gulf South in relation to your future requirements will be gladly given on request. *Your inquiry will be kept strictly confidential.*

PLAN YOUR FUTURE IN THE

Gulf South

For information on GULF SOUTH opportunities write to

SUPERVISOR OF INDUSTRIAL DEVELOPMENT

UNITED GAS
PIPE LINE COMPANY

FOR TEXAS, *Mail received at:* Beaumont, Beeville, Dallas, Fort Worth, Houston, Longview, San Antonio and Wichita Falls. **FOR LOUISIANA,** *Mail received at:* Baton Rouge, Lake Charles, Monroe and Shreveport. **FOR MISSISSIPPI, ALABAMA and FLORIDA,** *Mail received at:* Jackson, Mississippi.

ALL INQUIRIES CONSIDERED CONFIDENTIAL

BUY UNITED STATES WAR SAVINGS BONDS AND STAMPS . . HELP WIN THE WAR

COPR., 1942 UNITED GAS PIPE LINE CO.

STEEL SCRAP *needed NOW*

TO KEEP WAR MATERIALS MOVING

Iron and steel scrap is used in enormous quantities in making new steel. The steel industry is now in urgent need of scrap to keep the mills operating—to keep war materials moving steadily to American fighting forces and to our Allies.

It is of vital importance to everyone to see that all iron and steel scrap is salvaged now and sent on its way to the mills. Your contribution—much or little—is needed now to secure the total scrap tonnage required to prevent a drop in production.

This appeal is not for ourselves alone. Much of the scrap you contribute will be allocated by the Government to be used wherever it is needed the most.

Salvage Anything Made of Steel or Iron

Manufacturing plants of all kinds are in a position to be of real assistance in relieving the present scrap shortage. Anything made of iron or steel is valuable as scrap—broken or wornout parts of machinery, steel-work from dismantled buildings, old boilers, obsolete dies, pipe. Comb your plant and warehouses for such material.

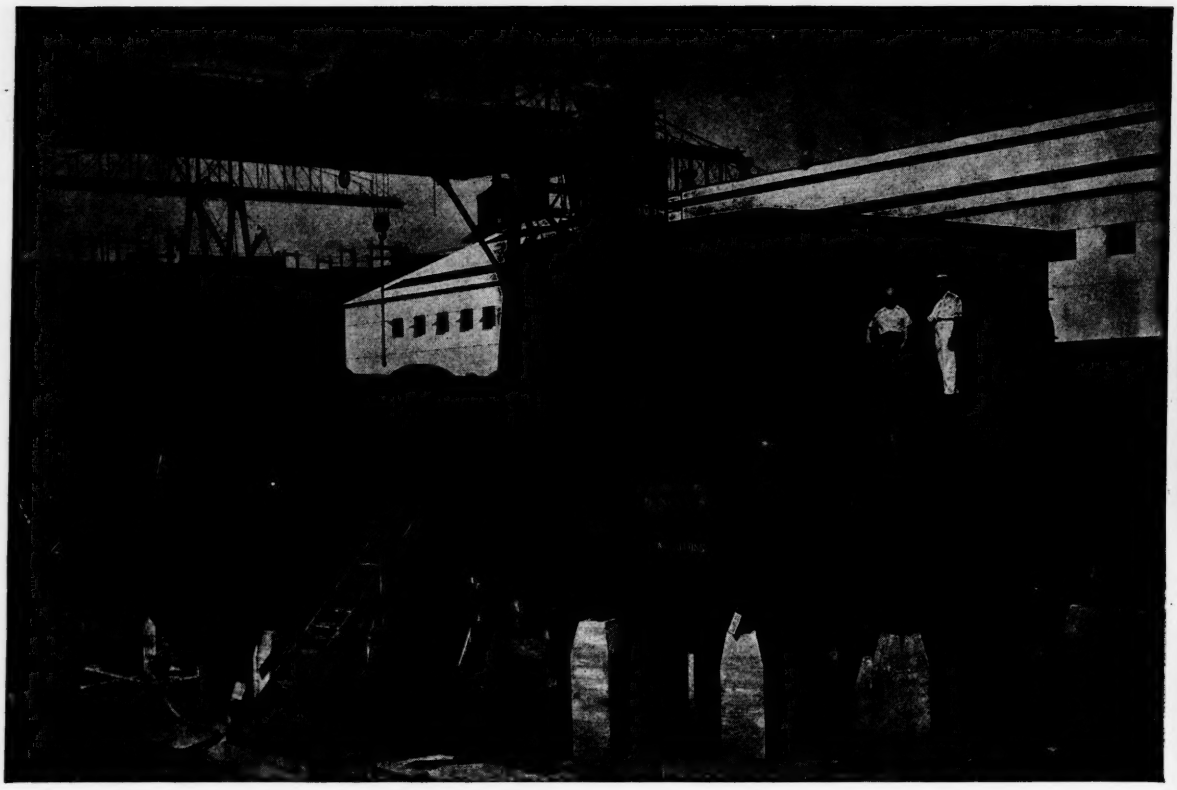
Time is short. The need is urgent. Put your scrap to work for your country—*now!*

WHAT TO DO WITH IT

To get your scrap on its way to the steel mills, sell it to a junk dealer, or get in touch with your local Industrial Salvage Committee. Many organizations have appointed someone to be in charge of salvage—someone who has authority to order the scrapping of material not in actual use, or material which will go out of use in the near future. In this way, available scrap can be located and disposed of most efficiently.

BETHLEHEM STEEL

BETHLEHEM STEEL COMPANY



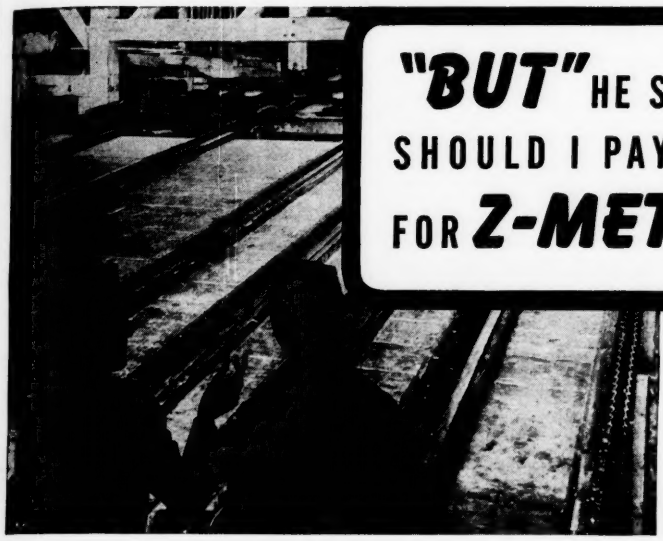
150,000 HP Francis Turbine for Grand Coulee Project

(SHOP HYDROSTATIC TEST—230 LB. PER SQ. IN.)

HYDRAULIC TURBINES

Francis and High Speed Runners
Butterfly Valves
Power Operated Rack Rakes
Gates and Gate Hoists
Electrically Welded Racks

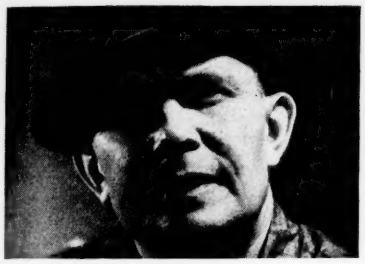
Newport News Shipbuilding and Dry Dock Company
(Hydraulic Turbine Division)
Newport News, Virginia



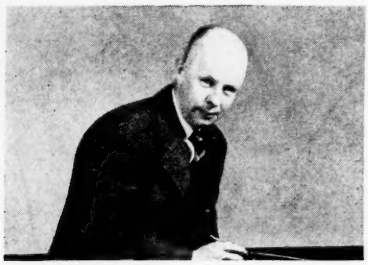
"BUT" HE SAID, "WHY SHOULD I PAY A PREMIUM FOR Z-METAL?"

*THE REX MAN

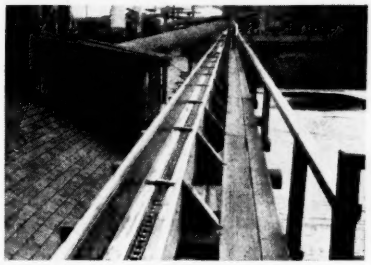
. . . AND THIS IS WHAT I* TOLD HIM . . .



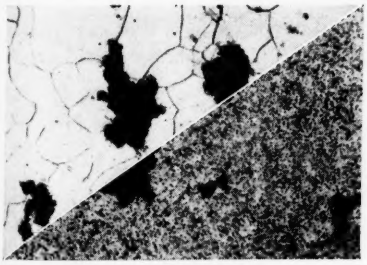
① **"MAYBE Z-METAL** chain belts last longer," this superintendent said. "But is this worth the premium that you are asking me to pay? Sure, I want all the durability I can get, because breakdowns these days are more than a nuisance."



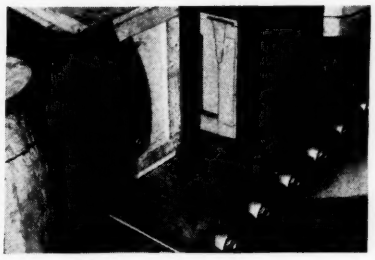
② **"BELIEVE ME,** if they cost twice as much, they would still be worth it! They not only last a *little* longer than ordinary chain belts—they last a *whale of a lot longer!* They're not only a little stronger *—they're over 25% stronger!"*



③ **"NOT ONLY THAT,** Z-metal chain belts offer you practical immunity against moist conditions. These three factors of greater strength, much longer life, and resistance to corrosion mean a far greater return on your investment."



④ **"Z-METAL'S SUPERIORITY** is fact, as these micrographs show. At left is the structure of good malleable iron; at right is that of Z-metal. When you think that Z-metal only costs you a little more, you'll marvel at their longer service."



⑤ **"Z-METAL CHAIN BELTS** can replace conveyors like these on the same sprockets without any expensive changes, and better than double their life. They've done it for many other mills, and I am sure they can do it for yours."

⑥ **"WELL, I BELIEVE** you've sold me," he said. "After all, if I can get that kind of durability for just a little more money my figures show that a Z-metal chain belt can pay for itself in a hurry through eliminating frequent delays and repairs."

Z-metal chain belts are hard at work these days in plants the country over. They've answered a variety of problems for others; they can do the same for you. Naturally, orders bearing highest priority distinction take precedence. Chain Belt Company, 1718 W. Bruce Street, Milwaukee, Wis.

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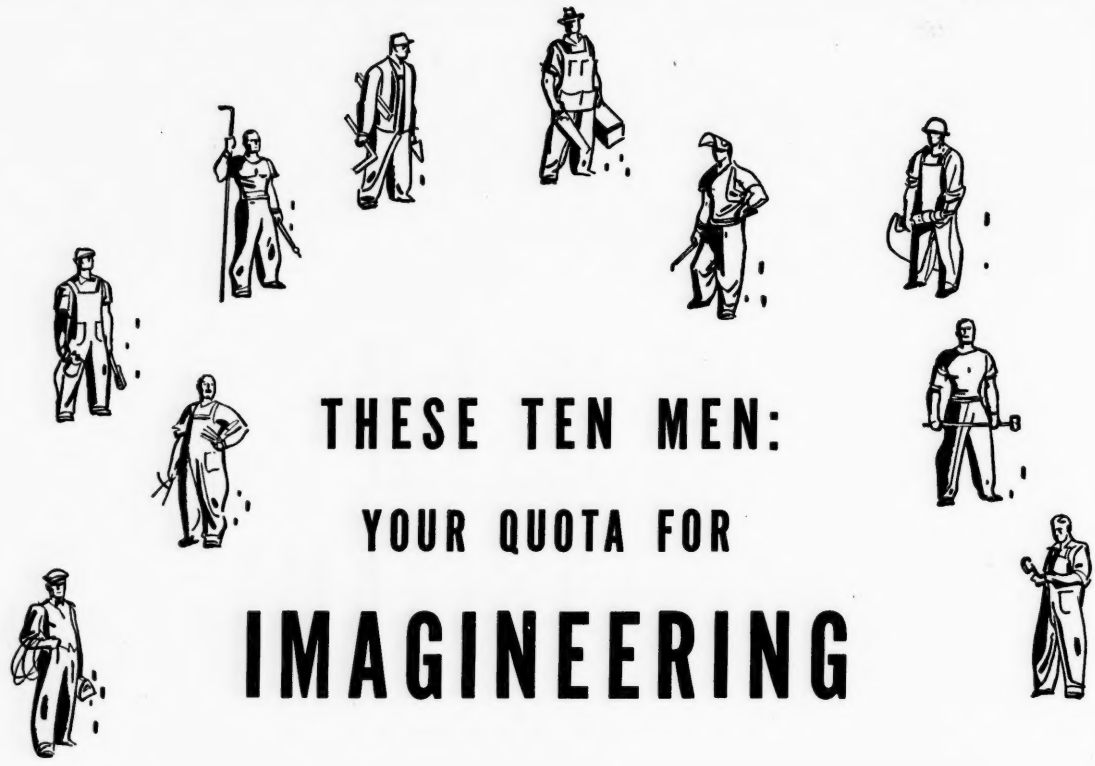
REX CHAIN BELT COMPANY

XUM



THESE TEN MEN:

YOUR QUOTA FOR

IMAGINEERING

YOU ARE ONE OF 758,049 business executives before whom we are placing this personal message.

If each one of you were to measure your stake in America's future as the personal responsibility of concocting new jobs for only ten men . . . why then, Business would have over seven and a half million jobs, new jobs that never existed before, ready for the boys coming back, and the men now on war production.

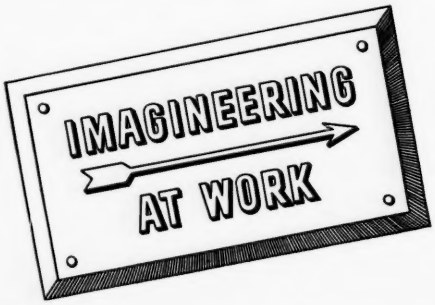
That would be something! That would make a peace that was a peace!

New things to make. New services to render. Old products, old services, improved. These are the kind of things that make new jobs. It takes imagination. It also takes your kind of practical mind. We call the process Imagineering. One set of tools you can work with are the new low prices, the new knowledge, and the new techniques of Alcoa Aluminum.

All of us have the privilege of building the pump that will flood America with jobs after the war. All of us also have the duty of priming it. We can do it by buying War Bonds and Stamps. Buying Bonds not only finances the war. It not only helps to defeat inflation. It also provides your family with the wherewithal to buy the new things which industry is getting ready.

That's personal Imagineering; getting ready for tomorrow, today.

ALUMINUM COMPANY OF AMERICA, 2109 Gulf Building, Pittsburgh, Pennsylvania.



ALCOA ALUMINUM

Are you suffering from "overhead-ache?"

Aspirin is no cure for a leaky roof that's slowing down production . . . but with a Barrett Specification* Roof you can avoid entirely this kind of "overhead-ache."

Ask any of the thousands of manufacturers who rely on Barrett Specification Roof protection to help keep production rolling, with no time out for repairs.

Barrett coal-tar pitch and felt roofs have proved, in 88 years of active service, that they are not only fire-resisting, but that they offer the maximum in dependable, long-lasting protection against water, heat and mechanical wear. The 20-year bond against repair and maintenance a Barrett Specification Roof carries just begins to measure the real life of the roof.

If you are expanding to a new plant . . . or to any building where you want production to proceed without interruptions . . . call on Barrett or your local Barrett Approved Roofer. He's an experienced roofing expert, chosen for his know-how.

He'll be glad to take the roofing problem off your shoulders "for the duration" . . . and many years to come.

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The "End Use" of America's gigantic war production program is to create an irresistible force on all fronts—in the air, on sea and on land But the first compelling need was for more power, enormous factory buildings and facilities of every description to produce the mountainous quantities of mechanized equipment and materials required on these fronts.

The diversified construction experience of Virginia Bridge has been an important factor in supplying the fabricated structural steel for a large number of these essential projects. Many of them are now completed or nearing completion because of the concentrated application of our fabricating, engineering and erecting know-how.

In peace and war, in good times and bad—year-in and year-out for nearly half a century Virginia Bridge has been a source of dependable supply for fabricated structural steel. Today all of our resources of equipment and accumulated engineering and construction experience are active in projects vitally necessary to the successful accomplishment of America's No. 1 job.

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Plants:

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VIRGINIA BRIDGE COMPANY

(South's Largest Structural Steel Fabricator)

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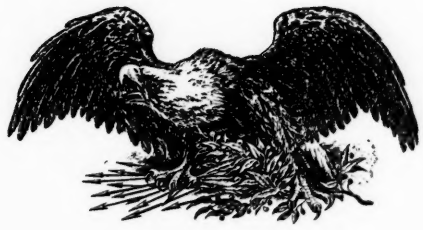
UNITED STATES STEEL



--- SELFISHNESS ---

GOVERNMENT PROBLEM No. 1

MANY men who served this country loyally in the first world war are not wanted for active service in this one. They may be considered to be physically unfit or they may be considered more valuable to the nation in civilian life than in the armed forces. To most such men this military inactivity is a constant source of mental and moral grief. They chafe under the restraint that is imposed, or is self imposed, upon their personal desires. They chafe all the more because while they as individuals are doing their jobs to the best of their abilities—and often doing other people's jobs as well—they see their efforts thwarted and frustrated by incompetency and selfishness by some tentacle of the octopus that squats in Washington.

These men make no criticism of the conduct of the war. As ex-service men they are fully aware of the fact that they do not know enough to criticize. As patriotic citizens they would not criticize even if they were qualified to do so. But they do know enough about business and practical affairs to recognize the lack of organization, petty political wire pulling and the selfish greed of pressure groups that impede the war effort and handicap the domestic economy on which the war effort is based.

They also know enough about the history of democratic peoples and the theory on which the federal government was founded to say that they are unalterably opposed to government by whim. They do not care whether the whim be that of a petty administrative appointee or of the head of the executive branch of the government himself. They are literally fed up on whims and want them replaced by workable plans and they want those plans carried out by responsible and capable men, free from political sniping.

They also know enough about war to say that it is no time for domestic social reform. They know that such questions tend to divide a people who should have a single united purpose. They also know that so-called reforms passed under war conditions are very apt to be ill conceived and have very far reaching, harmful after effects. They remember the 18th amendment and the Volstead Act, prohibition and national vice and crime and intemperance.

These men are looking to Washington for leadership. They are looking to their President and to Congress. Small though the oar may be that they are pulling in the boat, they want to feel that the boat is steering a straight course and not being steered against the tide or in circles. They expect intelligence and courage from their leaders but above all else they expect the kind of unselfishness from them that is the backbone of military morale.

These men, and every American, can have this assurance when the politicians now in control of our government learn that they can stop being politicians and think and act as statesmen.

A CHALLENGE TO BUSINESS LEADERSHIP IN THE SOUTH

By

ROSCOE ARANT

Regional Business Consultant
United States Department of Commerce
Atlanta, Georgia

AT no time in history has the balance of civilization rested more heavily upon the economic structure of any one nation than it does on that of America today. There is no indication that this burden will be abated with the cessation of present hostilities. In fact, with the coming of peace, it may rest even more heavily than during the war.*

When this war is ended, the economic and social systems of nations throughout the world will have been wrecked; there will be problems of every kind everywhere—sickness, starvation, unemployment, crime, economic disorganization—and financial collapse.

The plight of the captive countries is beyond our comprehension; their cities have been reduced to rubble; their lands despoiled, their cattle slaughtered; their ships sunk; their banks, shops and factories stripped and their homes destroyed.

The inevitable chaos in the wrecked social, economic and political systems of the world, make it naive to even suggest that we can escape repercussions of such magnitude as to threaten the security of our own civilization.

As the economic strength of this nation is now saving our freedom through supplying our Allies with implements of war, it must also save it in peace by supplying those devastated nations with subsistence and the means of reconstructing their economies—until they are able to feed and clothe themselves.

The strain upon the American system of free enterprise will be greater than any it has ever known before. If it fails in this tremendous task, not only will the effect upon world economy be beyond the power of human comprehension, but we, as a nation, will stand to lose in peace, all for which we have fought in war.

If free enterprise does stand the test, it will not only be the saving grace for reconstructing civilization, but will enable our own nation, and the world, to rise to heights of human welfare not known before.

If the system of free economy around which our own civilization is moulded is to survive, it is impelling that it be reexamined, its faults recognized, and its strength fortified to meet any conceivable shock.

It is also necessary to recognize some recent trends with respect to free enterprise in America—some situations which lie in our own postwar problems—and then determine on a course of action for business leadership in the South, for never before has the South faced such a boundless opportunity.

Everyone is familiar with the defensive position of free enterprise in the decade before the war, due to depression and the inability of business to absorb labor and capital back into profitable employment.

Estimates of unemployment in the early thirties, ranged from 12 to 18 millions. Large blocks of capital were idle throughout the nation. No one will forget the unrest and insecurity which resulted in the almost overwhelming election of Franklin D. Roosevelt in 1932, and the incursions that government then made into the traditional fields of private enterprise.

It performed functions of banking, insurance, the production and distribution of electric power, housing, and others on a large scale. Hundreds of thousands of workers who were unable to find employment on industrial rolls, were given employment by government. Billions of dollars passed from private control to investment by government for the purpose of providing employment.

The particulars, or merits of this process, need not be discussed here. It is sufficient for the present to recognize the process as fact—and that it was possible only because private enterprise was not doing the job—and that it was accepted because the public had come to believe that it could be done only by government.

The exigencies of war now make it necessary for government to extend its controls and operations still further into the regular fields of business and industry. How far it will go, no man is prophet enough to foresee.

With the close of hostilities, there will be a problem of converting a large part of the nation's capital resources, and millions of American men and women from the services of war to pursuits of peace. The danger which attends prolonged unemployment upon demobilization in this country will be multiplied many times over by the impact resulting from the poverty and devastation of other lands.

We know that the seeds of discontent and revolution are always found in unemployment and insecurity. If the free enterprise system is to prevail, it must provide the personal freedom and economic security necessary for satisfied and contented lives. No social revolution ever grew out of full stomachs.

When the war is over, if our demobilized population is to find employment, these people will have to go either to private industry or to government. The more quickly, the more completely, and the more profitably private industry absorbs the post war unemployed of the nation, the more completely will the ideals of democracy and

free enterprise be maintained.

To the extent that industry fails in this task, it will be necessary for population to look to government for employment and security. The more dependent for their security a people become on their government the higher must the burden of taxation become, the further must government reach into the operations of business, and the stronger must be its controls over the daily lives of its people.

The magnitude of the problem after the war will be unparalleled by anything previous in American history. Widespread insecurity and unemployment will provide fertile ground for those subtle and subversive elements which seek to substitute government for private economy. Those forces have been working for years, and are now at work.

For those Americans who believe that the greatest measure of economic security and personal freedom for our people lies in a well-operating system characterized by private enterprise, in a democracy of free men, the issue seems clear. Enterprise must throw off those features which encumber its continuous and efficient operation, and find some means of reabsorbing men and capital back into profitable employment.

To take a defeatist position and regard the job as impossible—is to invite disaster. To remain personally inactive and to assume that others will do the job, or that it will all work out, "as it always has done," is equally disastrous. And to be lulled into a sense of false security in the belief that it will all be taken care of through "plans now being drawn in Washington," is to invite the very government ownership and control we hope to avoid.

Some means must be devised to stem the flow of labor and capital from the employment rolls of private enterprise to those of government.

It is apparent that the only effective course to follow is a militantly positive one — a course planned by business leadership, to be executed through business processes. It will require men of strength, breadth of vision, a strong sense of responsibility, and the recognition of a cause for which they are willing to fight.

It requires decisive action now, and the preparation of plans now for execution the day hostilities cease. If there is unnecessary delay, and decisions not made, developments may take away from the business men all power of decision. When our boys return from Australia, after a demonstration that industry can operate at peak and give employment to all for war purposes, it will do no good to tell them there is no employment, because private enterprise is now in a peacetime depression. If they are told this they may take matters into their own hands.

In this connection, the South occupies a special position in the picture. With the close of hostilities, the teeming millions of this region should provide one of the largest potential markets of the nation. The development of the necessary purchasing power will require income-producing employment of the broadest, highest, and most profitable type.

The resources of the South, which are readily adaptable to industrial development, are unexcelled by those of any other region. In agriculture, minerals, forestry, and power, they are the most widely diversified, both in character and in geography. This diversity of resources provides the basis for the best balanced economy in America.

Our farmers need a ready market for their products so that they can grow better and more profitable crops. Industry based on agriculture can aid in providing those markets. **Industry based on the agriculture, minerals, forests, and other resources of the South, can provide profits, employment and income for millions, and the purchasing power of those millions can help provide employment for millions in other regions. The South is one of the prime reserves, or back logs, which should give balance and stability to the national economy in the crisis which is certain to follow the termination of war.**

The responsibility for business men of the South implies a well-defined program for the most effective utilization of the resources of the region for widespread employment at profitable levels. Each type of resource, whether it be certain agricultural crops, minerals, forestry, fisheries, or others, should be thoroughly studied for its maximum income possibilities, taking all factors into account, such as quality, quantity, location, transportation, power, labor supply, markets, etc., and then, capital and business energy be directed into their places of maximum advantage.

Farm income is low in the South, and for this reason among others it has not developed its industrial economy as rapidly as it should. How can industry develop in the South on a broad scale when the preponderance of its population has a low buying power?

Yet, if the answer is left to the unguided rural farmer, it will take generations. It is a problem for business leadership. In the eight Southern states of South Carolina, Georgia, Florida, Tennessee, Alabama, Mississippi, Louisiana, and Arkansas, there are eight and one-half millions of farm population. If through business guidance, they —not government—are able to raise their income levels by only $50 per capita, it would mean not only much needed food, clothes, education and health to them, but it would mean $425,000,000 in markets to business.

If it can be raised by $100, it would mean $850,000,000 in markets for farm population alone. If it were done for the entire South, $100 per capita would mean more than one billion dollars in increased markets. One crop alone, the sweet potato, in the light of recent demonstrations, would do this job in a surprisingly short time if properly sponsored through a well worked out program by organized business.

Think what that one factor alone would mean both in personal security and satisfaction for those people, and in the employment of demobilized capital and labor, when war is over. If all other resources are forgotten, our farm markets alone would draw industry on an unprecedented scale. Fifty dollars, or even $100 increase per year per capita is not too much to expect. It can be done if business leadership representing all

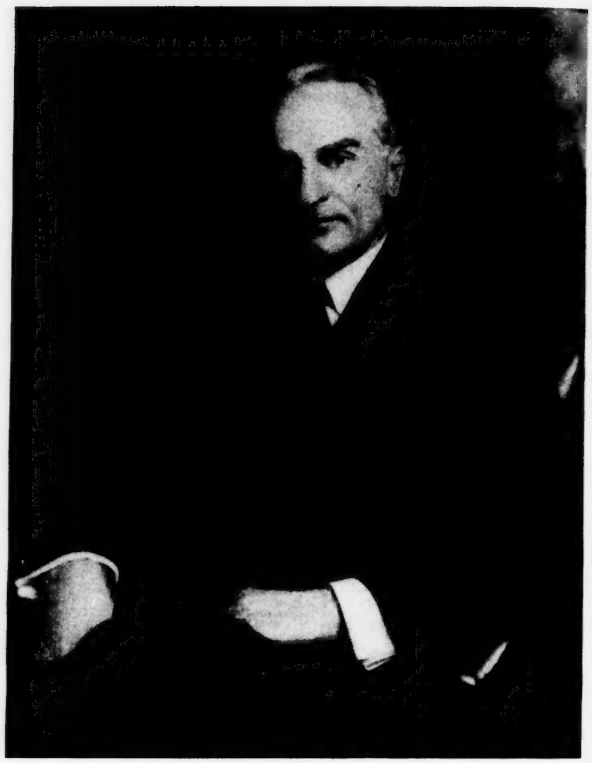
(*Continued on page 42*)

A PLEDGE FULFILLED

By

ERNEST E. NORRIS

President, Southern Railway System
Chairman, Southeastern Presidents' Conference



Ernest E. Norris

A FULL year and three weeks before Pearl Harbor, the American Railroads, including those serving the South, solemnly and publicly pledged "that, individually and in cooperation with one another and with the government of the United States, they will continue to meet *to the full* the demands of commerce *and* the needs of national defense."

That pledge wasn't made just to reassure the American people as they breathlessly watched a tragic war approach closer and closer. That pledge wasn't compounded of over-confidence, starry-eyed optimism and hope. That pledge stood high and alone, without a single reservation; without a qualifying "if," like a beacon light cutting through the thick fog of anxiety and apprehension that was then blanketing the nation. That pledge spoke for the railroad network of the Southland. That pledge was based on a record of real achievement. It was built on a firm foundation of facts and figures and sound thinking. It was utterly honest and sincere. Above all, it reflected a stirring will to do; a grim determination to marshal every resource, every facility, all the courage, the strength, the ingenuity and the talent of the entire railway industry in support of America's stand for freedom and peace and the annihilation of greed and aggression.

There's an interesting story behind that pledge; one that should be told over and over again. Appropriately it can be made a part of this article, for, while it is essentially the story of all the American railroads, it is also the story of those lines of rail which gridiron the Southern states.

It begins in World War I, when this country learned many a priceless lesson about her railroads. For one thing, every American realized then that our railroads are the backbone of our social and economic life in peacetime—a natural result of the full realization that railroads are absolutely essential to the nation's very existence in wartime. They learned, too, that there is an inherent efficiency in private operation of railroads; an efficiency that cannot be equalled by any other form of ownership and operation.

More specifically, the shippers of the nation—especially the biggest shipper of all in wartime, the government—learned that the railroad plant cannot "double in brass" as a transportation machine and as a storage warehouse. That meant recognition by all that freight cars must never be permitted to stand under load; that they must be loaded and unloaded promptly to give the maximum of transportation service. And most important of all, railroad men themselves learned many a bitter lesson from their trying experience with government operation, the most important probably being the value of planning ahead and of machinery to make cooperation between the railroads and the users of railroads effective.

The inevitable result of this renewed awareness of the essential nature of railroad service; this wider and better understanding of how the railroad plant should be employed, in peace and in war; this reawakened appreciation by railroad men of their responsibility for efficient operation and effective cooperation, was progress toward a dynamic ideal—to prepare today for the traffic and the transportation problems of tomorrow.

In line with this ideal, the railroads began shortly after the end of the war to build a new and a better transportation machine, working toward this goal as fast as

their financial situation would permit. They streamlined their methods and facilities; they stepped-up the efficiency of their operations to new heights; they organized new machinery for cooperation with shippers and the government; and they laid careful and detailed plans to meet every conceivable problem that might arise should this nation again be forced to pick up the fight for decency and liberty. In all of these measures of progress, the Southern railroads played an important role.

This gigantic problem of railway rehabilitation and modernization, started in the early twenties, continued through the boom years of that decade and on through the depression years of the thirties—despite the handicaps of dwindling revenues, ever increasing taxes, skyrocketing expenses and subsidized competition.

Then in the Fall of 1939 came the first test of the efficacy of almost twenty years of preparation. For some time Europe had been skidding toward total war. Every nation began frantically buying armaments, food, material and supplies in this country. Freight traffic volume on the American railroads began to climb rapidly. Predictions were broadcast that the railroads would never be able to get through the year without a "breakdown." But they did! And with capacity to spare, despite the fact that the increase in traffic was sharper and greater than anything ever recorded before. In fact, they greatly exceeded even their own estimates of what they would be able to do with the plant then available for service. They did this job so successfully because they were prepared for it—by almost twenty years of planning and practice.

Shortly after the actual outbreak of war in 1939, the railroads adopted a "program to provide adequate transportation service" which involved taking "immediate steps to place their motive power and cars in shape to handle *any* probable increase in traffic." Again, the action was timely—and fortunate for the nation.

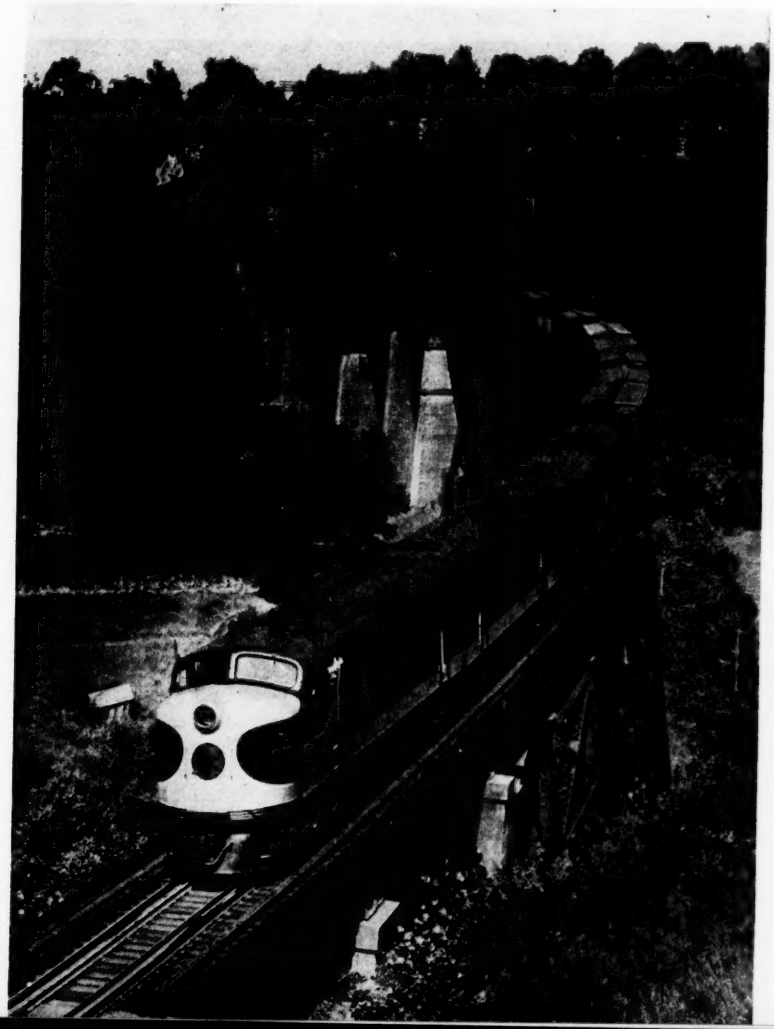
In 1940 we began to think about—and to act upon—a program of "national defense." This, plus the pyramiding of war purchases from abroad, produced a further increase in railroad traffic—and a repetition of the dire predictions that the railroad would be unable to handle the Fall peak load of that year. Again, the railroads came through the year with colors flying, handling almost twelve percent more business during the year than they did in 1939.

This then was the background of achievement that gave real significance to the railroads' pledge made on November 13, 1940. But that was almost two years ago. What is the record to date?

Early in 1941, the United States became the "arsenal of democracy." At the same time our own preparations for defense—or for war, should that tragedy befall the nation—were speeded up. Railroad freight traffic shot up to record-breaking levels, far greater than any volume ever known before. And once more, the railroads turned in a superlative job, meeting *every* demand both of commerce and the national defense; keeping their pledge to the letter.

This year the story is the same. Burden after burden has been placed on the railroads and they have never faltered and never complained. Enemy submarines have driven a tremendous volume of coast-wise and intercoastal water traffic to the rails. Rationing of rubber and gas and priorities in air travel have diverted heavy freight and passenger loads from these carriers to the railroads. Staggering tonnages of oil that have never before been handled by rail are moving through the South to relieve the acute shortage in the Eastern states. In the first six months of the years, Uncle Sam called for enough equipment to

(*Continued on page 54*)



It is freight trains like this one of the Southern Railway System, seen crossing the Cumberland River bridge near Burnside, Ky., that are meeting the demands of both commerce and national defense by hauling men and materials in loads that have no parallel in American railroad history.

WAR USES OF FARM PRODUCTS

by

Dr. Henry G. Knight

HENRY G. KNIGHT

1878-1942

The Manufacturers Record deems it a privilege to print the accompanying article which was promised to us by Dr. Knight, chief of the Bureau of Agricultural Chemistry and Engineering, U. S. Department of Agriculture, shortly before his untimely death on July 13. It culminates many years of pleasant relationship and interesting articles which Dr. Knight so generously contributed in cooperating with us for the industrial development of the South.

Though a middle westerner by birth and education, Dr. Knight was intensely interested in and a firm believer in the future of the South. We agree with Secretary of Agriculture Wickard who said of Dr. Knight: "He has been an important factor in the development of scientific agriculture and the relationship between farming and industry. His loss is particularly heavy at this time when the country is using its every resource to win the war. However, we are fortunate in having the modern research organization he did so much to build." —Editor.

WHEN Vice President Wallace laid the cornerstone for the first of the Department of Agriculture's four Regional Research Laboratories he said, "It is a comforting thought to know that this great research laboratory that we are laying the cornerstone for today, and the other three that are under construction in other parts of the country, could be turned into research institutions for National defense should the occasion demand."

I'm glad to be able to say that these laboratories are living up to Vice President Wallace's prediction. They, along with other research organizations and institutions, are contributing their bit to the defense of the country. Defense activities used to refer mainly to muskets, bayonets and cannon. But it's much broader than that today. Defense activities under present conditions comprise not only those lines of research directly related to military operations, but also to the secondary problems that arise in connection with the needs of the civilian population. Of course, these laboratories were designed for peacetime investigations, and so far as we know the entire staff of scientists will eventually return to that field of work, but for the present, at least, we are devoting our entire energies to National defense.

Naturally, I can't tell about all the work that is going on in these laboratories because some of it is of a confidential nature. But I will tell about some of the other things.

Cotton

Nitrocellulose, or what we used to call gun-cotton, is the basis for modern smokeless powder, which we are manufacturing in this country just as fast as we can. The cellulose which is used in making nitrocellulose normally comes from cotton linters. Our supply of chemical grades of linters is normally sufficient to meet our own needs, but with this country acting as the "arsenal for Democracy," our supply of linters is not sufficient to meet the combined needs of this country and the countries we are supplying.

Raw lint cotton has certain advantages as an alternative source of high-grade cellulose for use in an emergency, although, of course, it normally is too valuable for other purposes to be diverted to this use. In anticipation of a shortage of linters, the Southern Laboratory in New Orleans, began several months ago to investigate the possibility of using lint cotton for making smokeless powder. After successful laboratory experiments, plant-scale investigations were carried out in cooperation with industry and the Navy Department. While the final results of these investigations are not yet available, there is every indication that they will be successful. The principal problem involved in using lint cotton in smokeless powder is cutting it quickly and efficiently to suitable lengths for purification and nitration with existing equipment. A new type of cutting machine is being developed which we hope will solve this problem.

Some of the problems we are working on in the research laboratories involve the finding of domestic substitutes or replacements for imported materials which have been cut off by the war. For example, sandbags are a military necessity and are needed by the mil-

lions in warfare; yet, until recently, all sandbags were made from jute, or burlap as it is sometimes called. Burlap is imported from India, and since the fall of Singapore it is doubtful if we can get enough to meet even our sandbag requirements.

Looking to such a situation as we would now be facing if we had to depend on India for our sandbags, our cotton technologists suggested to the War Department long before the attack on Pearl Harbor that studies be made to see if cotton fabric couldn't be treated so as to make it satisfactory for sandbag purposes. It was pointed out that certain cotton fabrics which have the strength and quality required for sandbag purposes could be produced in large quantities in this country without much difficulty. The cotton technologists in the Southern Laboratory analyzed and tested a large number of commercially produced cotton fabrics, correlated the results with data obtained from service tests, and then used their findings as a basis for drawing up minimum specifications for use in purchasing cotton sandbags which the War Department is now doing. Shortly after the War Department adopted specifications for the purchase of cotton sandbags, our scientists were asked to conduct research to determine the most effective treatment for preserving fabrics against attacks by microorganisms. In compliance with this request, our chemists and bacteriologists made exhaustive tests of practically all known preservatives and made the results available to the War Department. There is no way of calculating the dollar and cent value of research of this kind, but it is definitely of a defense nature and it does utilize one of our major farm crops. Projects like this that find defense uses for farm products are valuable indeed in times like these.

Another development that looks promising at this time is the possibility of producing fire hose without the use of rubber and linen. The hose used by fire departments consists of a circular woven cotton fabric *lined* with *rubber* which is now about as valuable as gold. Then there is the *unlined* fire hose, kept for emergency use in industrial plants and other buildings, that is made of linen, a commodity which we can't get now in sufficient quantities on account of the war. Last September, the Civilian Defense Administrator requested us to investigate the possibility of making a fire hose wholly from domestic materials that will be leakproof and strong enough to meet the demands for both types of service. Our technologists believe that a pliable plastic lined hose of proper design can be developed which will be equal and probably superior to the present rubber lined type. The plastic lining phase of this work is being done by a

(*Continued on page 50*)

Top—Soil burial tests on treated cotton fabrics at the New Orleans laboratory. Center—This rubber substitute can be made from cottonseed oil, peanut oil, soybean oil or corn oil. Bottom—Absorbent material used in producing nicotine from tobacco.

A CORK GROWING INDUSTRY *for the* SOUTH

A large cork oak at Daphne, Georgia

THE exigencies of previous wars have resulted in the development of several of this country's industries that have made us independent of foreign supplies. The present war is likely to be no exception.

One such industry offering possibilities for the future is cork growing, in which the South may occupy an important part.*

For over 2,300 years the world's supply of cork has come from a total area approximately the size of the state of New Jersey, stretching in a narrow belt for more than 1,000 miles along the northern coast of Africa and more than 1,500 miles along the coasts of Portugal, Spain, France and western Italy. Just why this cork oak tree grows in commercial stands only in Portugal and in areas bordering the Mediterranean is not known but previous attempts to establish cork forests in this country and elsewhere have been unsuccessful.

A large cork oak on the Seaton Hill place near Greensboro, Ala.

When war came to this country almost our entire supply of cork was immediately cut off. The resulting shortage to industrial and commercial users as well as to the armed forces that consume large quantities, causes serious difficulties which are intensified by similar shortages of practical substitutes.

One of the largest uses of cork in this country is for cork stoppers, consequently, the possibility of a cork shortage was a matter of vital concern to manufacturers of these products. The president of one of these concerns, Charles E. McManus of the Crown Cork and Seal Company, had seen that some cork oak trees in California were sufficiently far advanced to have the bark removed. Realizing the possibilities of a potential domestic source of supply, Mr. McManus communicated with local and state authorities and Crown Cork and Seal's subsidiary, Western Crown Cork and Seal Corp., was assigned the task of stripping and planting operations in California. More than 21,000 cork seedlings were set out during 1941 in a relatively restricted area of California and a small part of Arizona.

With this start, the company's research department began inquiries into the feasibility of extending and developing this industry. What gave impetus to this was the fact that an examination of the California cork showed it to be equal to, if not superior in quality to the imported variety.

Studying this subject, Victor A. Ryan, research director of Crown Cork and Seal Co., says "Our ability to grow cork in sufficient quantities depends upon how much territory we can find within the United States whose physicogeographical environment equals or very nearly approximates that of the Mediterranean Area, where the cork oak is the product of natural

*Acknowledgement is made to *The Crown* and the research staff of the Crown Cork and Seal Company for the material and illustrations used in this article. Editor.

This old cork oak tree at Greensboro it will be noted has a large, well formed trunk with what appears to be a good cork bark.

vegetation. By the application of the fundamental physicogeographic principles dealing with climate, isotherms, frost-freeness, annual rainfall, land forms and soil, I have attempted to determine the potential area suitable for cork growing and to predicate the regions in which the best growth and yield may be expected."

The result of the application of these principles shows that for the entire country there is a total area of approximately 751,727 square miles in the 50° to 60° January isothermal span where the best growth may be expected. Of this amount, 82,004 square miles are located in the California region but nearly all the remainder is in the South where a grade of cork typically Portuguese can be produced.

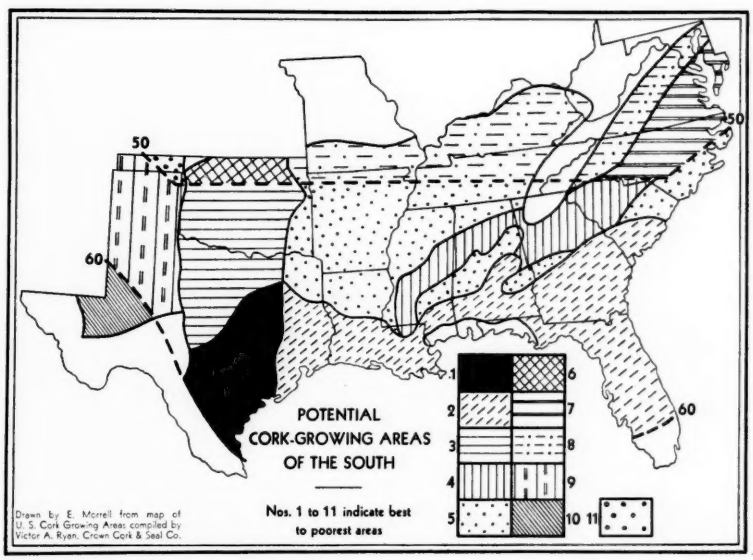
Assuming that only five percent of the land most suitable for cork growing in the South was actually converted for this purpose, then the yield—based on the Mediterranean's 7,840 square mile area with an annual production of about 300,000 tons, would amount to 1,200,000 tons or four times the Mediterranean area production.

So much for theory and assumption. The important question, however, is whether the cork tree will actually grow and produce cork in the South. Fortunately, the answer to that question already is known. Cork trees can and are growing in the South and they do produce cork. The fact that there are only a relatively small number is not negative evidence. Meanwhile their history is interesting and pertinent.

A survey of the southern states conducted by the Crown Cork and Seal Co., indicates that most, if not all the large old cork trees now growing in the South originated from the same source. About 1858, the United States Patent Office received a shipment of cork acorns from Spain and distributed them throughout the country, many of them going to the southern states. Just how many were planted is not now known. Undoubtedly a large number did not even germinate, while others succumbed at an early age due to lack of attention. Even so, a sufficient number have survived and even flourished to show that these trees will grow in the South. The only southern states in which the Crown Cork and Seal Co. failed to find a record of existing cork oaks were Arkansas, Louisiana and Mississippi but since areas of soil and climate exist in these states similar to those elsewhere in which cork trees are growing, it is believed that success may be obtained if the effort is made.

Altogether, the South would appear to offer considerable opportunities for the development of a cork industry and to this end arrangements have been made by the Crown Cork and Seal Co., in cooperation with state and local authorities for planting several thousands of cork oak seedlings this year. Results and observations from this initial effort will serve as a guide for future developments. Meanwhile the prospects augur well for yet another new industry for the South.

This cork oak tree at Winnsboro, South Carolina, would seem to indicate that such trees flourish in that part of the South. Unfortunately in this instance, souvenir hunters have removed much of the bark.



AMERICA PRODUCES TANKS

O.E.M. Photo

This 57-ton tank, known as the M-1 in its initial demonstration. Notice that the gun turrets are on the top, making it possible for the tank to take advantage of irregular land, sheltering the lower part and shooting from revolving turrets on top. In the turret are three-inch guns and a 37mm. anti-aircraft gun.

POUND-for-pound, tanks being made with American skill surpass any similar type in mobility and mechanical reliability. Hard hitting, tough, capable of out-running and out-lasting other models, American tanks didn't just happen to be good. Superiority was built into them by hundreds of precision tools. Each part is made to exact measurements and machine tools used to make them are of a special nature and size.

Thirty to fifty per cent of the weight of any tank is armor plate. To build a tank, hard thick steel that cannot be pierced by a rifle or machine gun bullet must be pressed, drilled and turned and reamed and milled to exact dimensions. Into a tank goes steel, nickel, brass, copper, aluminum, rubber, leather, glass, cotton, plastic, tin, lead, and petroleum products. In its skeleton are rolled plates, castings, forgings, rivets, volts, wire, tubing, ball and roller bearings, gears, electric motors, instruments, batteries and valves.

In a light tank are 14,000 individual pieces; in a medium tank, 25,000; in a heavy tank, 40,000, that must be machined, sub-assembled, and assembled. Many of the metal parts must be machined on boring mills, radial drilling machines, milling machines, and similar tools of much larger size than found in ordinary shops. The turret casting alone is as heavy as the average automobile. Armor castings and forgings are so tough that tungsten-carbide tools have to be used in nearly all turning and boring operations. Cutters of high-speed steel containing a high cobalt content must be used in milling and similar operations.

From beginning to end, the building of a tank is a task for machine tools. Without them would remain thin lines on drafting paper—with the right type of tools, they become the backbone of our armored forces.

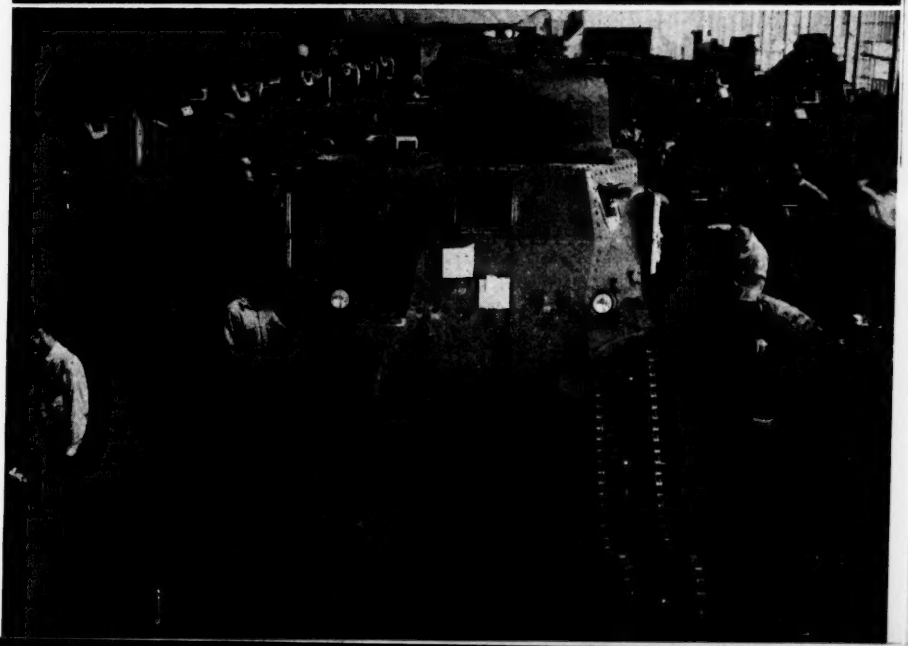
Up to several years ago there were almost as many tanks sitting as World War monuments in public squares as there were in fighting trim in the Army. Even these relics bore no battle scars, because no American-made tank fought in France. We used British heavy tanks and French light tanks and the total number was less than 300—not enough to equip one of our modern Armored Divisions.

The tank program on which we set our production schedules in this country was based on a 1919 campaign that fortunately didn't have to be fought. We did, however, make a few tanks. Up to the Armistice we built a total of 64 light tanks. And they were *light* tanks—they weighed only 7½ tons. The vehicles we call light tanks today are nearly twice as heavy as those old ones. Production of the World War light tanks continued to the end of March, 1919, at which time we had 778. For actual battle participation we got all our light tanks from the French who furnished us with 227.

Back in those days we called 30-ton tanks "heavies." Today we call vehicles of this weight "mediums." Our modern heavy tank weighs around 56 tons. The World War 30-ton tank program called for the joint endeavor of American and British industry. To reach the Allied goal of 1,500 vehicles, the British were to supply the armor plate and we were to build the motors and driving mechanisms. Up to the Armistice we had completed about half of our share. But the 30-tonners used in battle by our troops came from the British who supplied 64 vehicles.

During the next 15 years, 30 tanks were built in the United States. Meanwhile all of the World War models had become obsolete and by the time war broke out again in Europe the Army had in service only a few light tanks and a small number of 18-ton medium tanks, known as the M-2.

In production was an improved model of the medium tank, known as the M-2A1, with heavier armor



Top—In addition to the tanks guns, the tank soldier finds many chores for the Thompson sub-machine gun. Center—This is what happens when a truck gets in the way of a 57-ton tank. Bottom—Putting the tracks on one of the 28-ton M-3 tanks which are equipped with a 75mm. field artillery gun, a 37mm. anti-aircraft gun and four mounted machine guns. It is powered by 400 h.p. Wright Whirlwind aviation engine and is capable of speeds over 25 miles per hour.

O.E.M. Photo

bringing its weight to 20 tons. These tanks, and the earlier types, came from army arsenals where they were built by hand.

The need for modern mechanized fighting equipment, so forcefully demonstrated by the armored forces abroad, meant an end had to be put to this slow, tedious production method. American industry was asked to produce in great numbers a vehicle that is neither a tractor, a truck, nor a locomotive. It is something in between, with a nature and a function all its own. Joining in the program to produce this distant cousin of their civilian products are the locomotive, automotive and farm equipment industries. Helping them are plants that once made railroad cars, automobile and trailer bodies, automobile motors, diesel engines, airplane motors, tractors, oil well drilling equipment, type foundry equipment, shoe machines, compressed air equipment. Together they created a new industry to build monsters that cost $1 a pound and weigh up to 112,000 pounds.

First tank to be born of this new industry was the M-3 light, weighing 13½ tons, and equipped with 5 machine guns and a 37-mm gun —a highly destructive fighting unit that can move at speeds up to 35 miles per hour and has the tactical equivalent of 40 men of foot. It was on April 30, 1940, that the first delivery was made, and since then other production lines have started and more are being set up. Later models are going into production.

The first medium tank, M-3—a refinement of the M2A1—was delivered in April, 1941, and already it has been augmented by a later model, the M-4. With its seven men, four machine guns, a 37-mm tank gun, and a 75-mm cannon, it is a rolling battery of artillery.

(*Continued on page* 54)

SCRAP RUBBER'S PLACE IN THE WAR ECONOMY

ONE of the misconceptions about scrap rubber is that it has only limited uses. It is true in most instances scrap rubber must be mixed with crude rubber in order to make a satisfactory product, but this practice obviously saves our now priceless and irreplaceable stock of crude rubber, makes it go further, accomplish more.

The rubber industry always has used a percentage of scrap rubber in manufacturing most of the more than 50,000 rubber articles produced commercially. Scrap rubber went into the average automobile tire even before the war, when we still had access to inexhaustible supplies of natural rubber in Malaya and the Netherlands East Indies. The armed forces, forced to cut their consumption of rubber so that existing stocks may last until the victory or until our synthetics industry comes into full operation, stand ready to absorb all the reclaimed rubber we can supply. The armed forces can absorb this rubber, mixed with the proper proportion of new crude, as rapidly as we can provide it.

Figures on the percentage of reclaimed rubber used in the rubber industry over the period 1938-1941 inclusive are interesting when compared with figures on the importation of crude rubber during that period.

Year	*Reclaimed (Tons)*	*Crude Imports (Tons)*
1938	121,000	457,000
1939	170,000	592,000
1940	190,000	648,000
1941	270,000	775,000

Taken cold, these figures do not do full justice to the importance of reclaimed scrap rubber in our rubber economy. After 1938 there was a growing spread in the margin between crude rubber imports and the amount of reclaim, but this does not represent a decline in the use of reclaim rubber by manufacturers, it merely reflects growing fear of war in the Far East, fear which brought mild efforts to create a reserve of crude rubber against an uncertain future. The figure for 1938, in which reclaimed rubber amounts to just a little less than 25 percent of the total quota, affords a truer picture of the relative importance of scrap to crude in the rubber industry.

One of the reasons why the U. S. A. did not develop a more considerable reclaiming industry than now exists was the fact that crude rubber often was available at extremely low prices during the years since the last war. In 1932, for instance, crude rubber was selling for as little as 2½ cents a pound, f. o. b. New York and obviously reclaimed rubber—saddled with the cost of collection and the reclaiming operation—could not compete with it.

In rubber manufacture the proportion of reclaim which is mixed with new crude rubber varies according to the type of product being manufactured. However, to strike a rough average, it might be said that in most cases reclaim constitutes from 25 to 40 percent of the mixture. Assume that reclaimed rubber were mixed with crude on something like that basis, then three scrap tires or 48 hot water bottles or nine 20-foot lengths of garden hose would supply all the rubber needed for a pursuit plane.

There is nothing new about the process which will convert discarded rubber products into usable material.

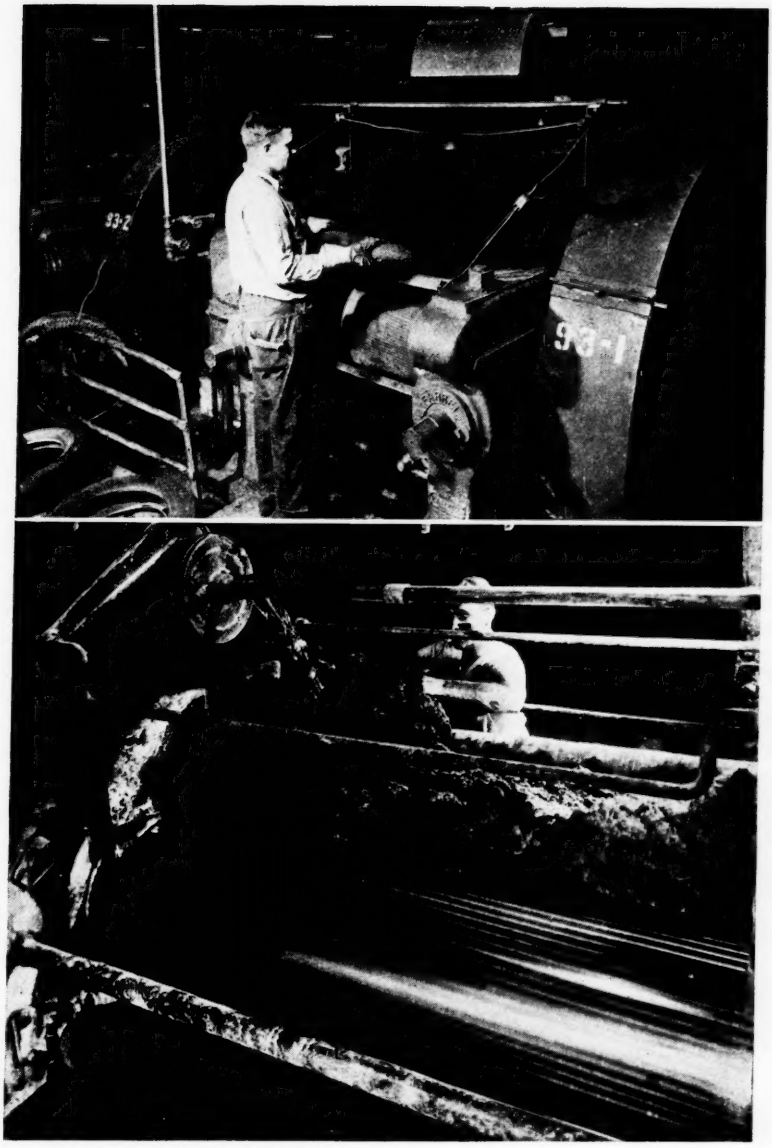
Most of the rubber used by the reclaiming plants—the maximum capacity of U. S. reclaiming plants is something like 320,000 tons a year—comes from old automobile tires. These flowed in great quantity to the reclaiming plants in the days of "happy motoring."

United States reclaiming plants have 320,000-ton annual capacity

If a large group of tires are to be reclaimed by the commonly used alkali process, they pass into the plant and on to what is called a "de-beading" machine, which strips the beads from the surface. The "scalped" tires are then ground and pass through rollers past rapidly rotating knives which cut them up into minute particles for the purpose of "digestion." This ground up scrap rubber is "digested" under pressure by means of caustic soda, which together with certain oils, acts on the scrap rubber while at the same time high temperatures and pressure do their work.

Once digested, the scrap must be cleaned; it must be washed free of dirt and of the caustic which remains. This is done by blowing the scrap under pressure into washing tanks and over streams which clean it. Digested, washed, the scrap rubber is put through a squeezing press to take out as much water as possible, drying it on belt dryers operating in temperatures of from 200 to 275 degrees.

Long before this the scrap has ceased to bear any resemblance to



Right, top—Grinding up the old tires, from which the beads have been removed, is the first operation in the making of reclaim rubber. The pulverized material is then placed in a de-vulcanizer where caustics eat the cotton away from the rubber. Right, bottom—Here, under pressure on these steam-heated mill rolls, all reclaimed rubber must be thoroughly mixed or kneaded before it goes to the refiner from whence it comes in the form of slabs ready to be used in the manufacture of various rubber products. [Photos by courtesy of The B. F. Goodrich Company.]

discarded rubber, it does not quite resemble crude rubber but it is definitely a material rather than a conglomerate of useless junk. The reclaimed rubber—for at this point that is what it has become—then is put through rollers while at the same time certain ingredients are added to give it such specific qualities as may be desired. The reclaimed rubber is now slab rubber and the slabs are passed through a refining operation. The refiner is much like a rolling mill but a mill capable of exerting tremendous pressure compressing the individual particles of rubber into a very fine sheet. Temperature plays its part here, too, the surface of the rollers is heated to a temperature between 180 and 225 degrees Fahrenheit. During this refining operation any yet unsoft pieces of scrap are expelled by the rollers; they are left behind in what is called the "bite" or are passed out at the edges. These hard pieces of scrap are called "tailings" and must be put through the digestive process again.

At this point the scrap rubber is "strained," but the straining process isn't like straining as we ordinarily think of it. The slabs of scrap—by now in sheet perhaps .01 of an inch in thickness—go into a machine with a barrel and screw. The screw, operating in the barrel, forces the scrap through a fine screen and removes such non-magnetic metals as brass and copper and any final traces of steel, the bulk of which was removed much earlier in the course of the grinding operation.

The scrap rubber emerges from the "strainer" in long spaghetti-like strings. After this it goes through a second refining operation on the rollers and is wound on rotating drums to give it the desired thickness. The reclaimed rubber ends up as a square flat slab and these slabs, after being dusted with powder to keep them from adhering one to the other, then are ready for use in military or essential civilian manufacture.

U. S. War Program Now Totals $223,000,000,000

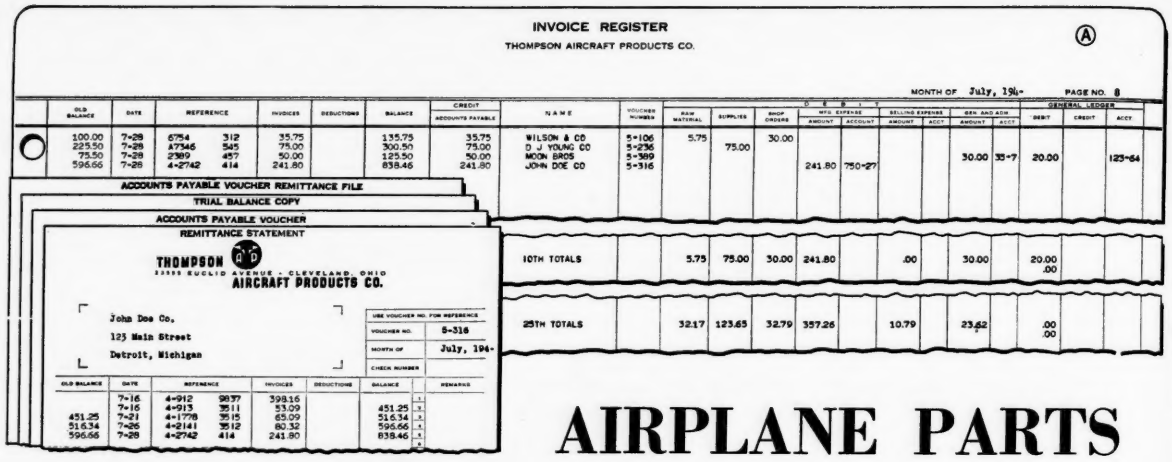
Of the United States' total war financial program amounting to approximately $223,000,000,000, appropriations and contract authorizations as of July 15 amounted to $212,000,000,000. The Military Appropriations Act of 1943 authorizing expenditure of $42,090,000,000 was signed by the President on July 2. The Naval Construction Act provides authorization to start construction on about $8,550,000,000 of additional naval tonnage. This was approved by the President on July 9, but the bill did not carry any specific appropriation of funds.

In addition, about $2,160,000,000 for other war agencies has been requested. Of this amount, $314,000,000 has been appropriated by Congress and approved by the President, and expenditure of the balance is provided for in pending legislation.

Expenditures by the Federal Government for military purposes during the first two years of war effort ended June 30 totaled $34,765,000,000. This includes disbursements by the Treasury and Reconstruction Finance Corporation.

Of this amount, $15,650,000,000 was paid out for the Army, $10,211,000,000 for the Navy, $4,098,000,000 for the Lend-Lease Administration and $4,806,000,000 for other war agencies.

Expenditures in June amounted to $4,123,000,000 as compared with $3,880,000,000 in May.



INVOICE REGISTER

THOMPSON AIRCRAFT PRODUCTS CO.

Ⓐ

MONTH OF July, 19⅓- PAGE NO. 8

	OLD BALANCE	DATE	REFERENCE		INVOICES	DEDUCTIONS	BALANCE	CREDIT ACCOUNTS PAYABLE	NAME	VOUCHER NUMBER	DEBIT RAW MATERIAL	DEBIT SUPPLIES	DEBIT SHOP ORDERS	DEBIT MFG. EXPENSE AMOUNT	DEBIT MFG. EXPENSE ACCOUNT	DEBIT SELLING EXPENSE AMOUNT	DEBIT SELLING EXPENSE ACCT.	DEBIT GEN. AND ADM. AMOUNT	DEBIT GEN. AND ADM. ACCT.	GENERAL LEDGER DEBIT	GENERAL LEDGER CREDIT	GENERAL LEDGER ACCT.
○	100.00	7-28	6754	312	35.75		135.75	35.75	WILSON & CO	5-106	5.75		30.00									
	225.50	7-28	A7546	545	75.00		300.50	75.00	D J YOUNG CO	5-236		75.00										
	75.50	7-28	2389	457	50.00		125.50	50.00	MOON BROS	5-389												
	596.66	7-28	4-2742	414	241.80		838.46	241.80	JOHN DOE CO	5-316				241.80	750-27			30.00	35-7	20.00		123-64
									10TH TOTALS		5.75	75.00	30.00	241.80		.00		30.00		20.00 .00		
									25TH TOTALS		32.17	123.65	32.79	357.26		10.79		23.62		.00 .00		

ACCOUNTS PAYABLE VOUCHER REMITTANCE FILE

TRIAL BALANCE COPY

ACCOUNTS PAYABLE VOUCHER

REMITTANCE STATEMENT

THOMPSON AIRCRAFT PRODUCTS CO.

22555 EUCLID AVENUE - CLEVELAND, OHIO

John Doe Co.
125 Main Street
Detroit, Michigan

USE VOUCHER NO. FOR REFERENCE
VOUCHER NO. 5-316
MONTH OF July, 19⅓-
CHECK NUMBER

OLD BALANCE	DATE	REFERENCE		INVOICES	DEDUCTIONS	BALANCE	REMARKS
	7-16	4-912	9837	398.16			
	7-16	4-913	3511	53.09		451.25	
451.25	7-21	4-1778	3515	65.09		516.34	
516.34	7-26	4-2141	3512	80.32		596.66	
596.66	7-28	4-2742	414	241.80		838.46	

AIRPLANE PARTS FIRM CUTS ACCOUNTING COSTS

IN the war effort which is engaging capacity operations by every producer, labor saving devices are a necessity in plants and offices.

Thompson Aircraft Products Company, Cleveland, Ohio, manufacturer of several hundreds of different kinds of airplane parts, has applied this thought in the use of modern equipment in its Accounting Department. D. F. Dunnabeck, the company's General Accountant, says: "Our present monthly invoice volume is in the neighborhood of 3,000, and we anticipate this will be tripled in the near future. Judging from results to date, we feel we will be able to absorb at least 6,000 of these 9,000 invoices within regular working hours, and the balance easily can be handled through a partial second operating shift. With pen and ink methods it would be impossible for us to maintain, except with a much larger clerical staff, such up to date records and control over account activity. We provide management with actual total payment due vendors at any time as well as an accurate estimate of payments accrued when the invoice register is closed. This is an important matter in planning finances."

By the employment of a Burroughs posting machine many things are possible in the office of this company. Space will not permit listing all of the operations that save valuable time nor telling the complete story of how necessary the machine is found in keeping up with the rush of a day's work.

After purchase requisitions are approved and purchase orders made out, one copy of the latter goes to an open purchase order file, properly numbered. Behind this, when it arrives, the corresponding receiving report is filed.

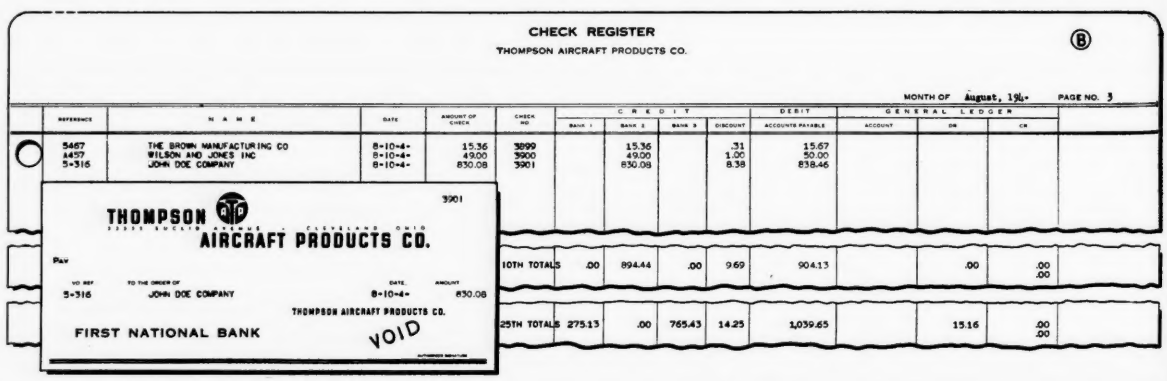
Invoices are sorted by due dates and alphabetically in each due date group. Invoices, purchase orders and receiving reports are then matched, account numbers and other data being noted on the invoices.

Duplicate invoice copies are sorted according to control accounts, and a prelist is made against which totals accumulated in the posting machine during a subsequent operation must balance.

From venders' invoices, the machine operator then prepares four-part vouchers and an invoice register, writing the two records simultaneously. (See Figure A.)

The machine automatically computes the account's new balance, which is printed in the "Balance" column. Building up and printing to-date balances eliminates the month-end "peak" accounting load found in some systems. The balance due on any account is immedi-

(Continued on page 49)



CHECK REGISTER

THOMPSON AIRCRAFT PRODUCTS CO.

Ⓑ

MONTH OF August, 19⅓- PAGE NO. 3

REFERENCE	NAME	DATE	AMOUNT OF CHECK	CHECK NO.	CREDIT BANK 1	CREDIT BANK 2	CREDIT BANK 3	CREDIT DISCOUNT	DEBIT ACCOUNTS PAYABLE	GENERAL LEDGER ACCOUNT	GENERAL LEDGER DR	GENERAL LEDGER CR
○ 5467	THE BROWN MANUFACTURING CO	8-10-4-	15.36	3899		15.36		.31	15.67			
4457	WILSON AND JONES INC	8-10-4-	49.00	3900		49.00		1.00	50.00			
5-316	JOHN DOE COMPANY	8-10-4-	830.08	3901		830.08		8.38	838.46			
	10TH TOTALS				.00	894.44	.00	9.69	904.13		.00	.00 .00
	25TH TOTALS				275.13	.00	765.43	14.25	1,039.65		15.16	.00 .00

3901

THOMPSON AIRCRAFT PRODUCTS CO.

Pay

VO. REF	TO THE ORDER OF	DATE	AMOUNT
5-316	JOHN DOE COMPANY	8-10-4-	830.08

THOMPSON AIRCRAFT PRODUCTS CO.

FIRST NATIONAL BANK

VOID

War Contracts and Allocations to Southern States Increase $1,249,578,000 During June

War contracts and allocations distributed by government agencies to the southern states for the period June 1, 1940 through June, 1942, totaled approximately $14,153,179,000 compared with $12,903,601,000 at the end of May, 1942. This represents a gain of $1,249,578,000 or almost ten percent during June. Totals by state and by government agency for the entire period are shown in the accompanying table.

Major War Supply and Facility Contracts and Allocations, June, 1940, Through June, 1942

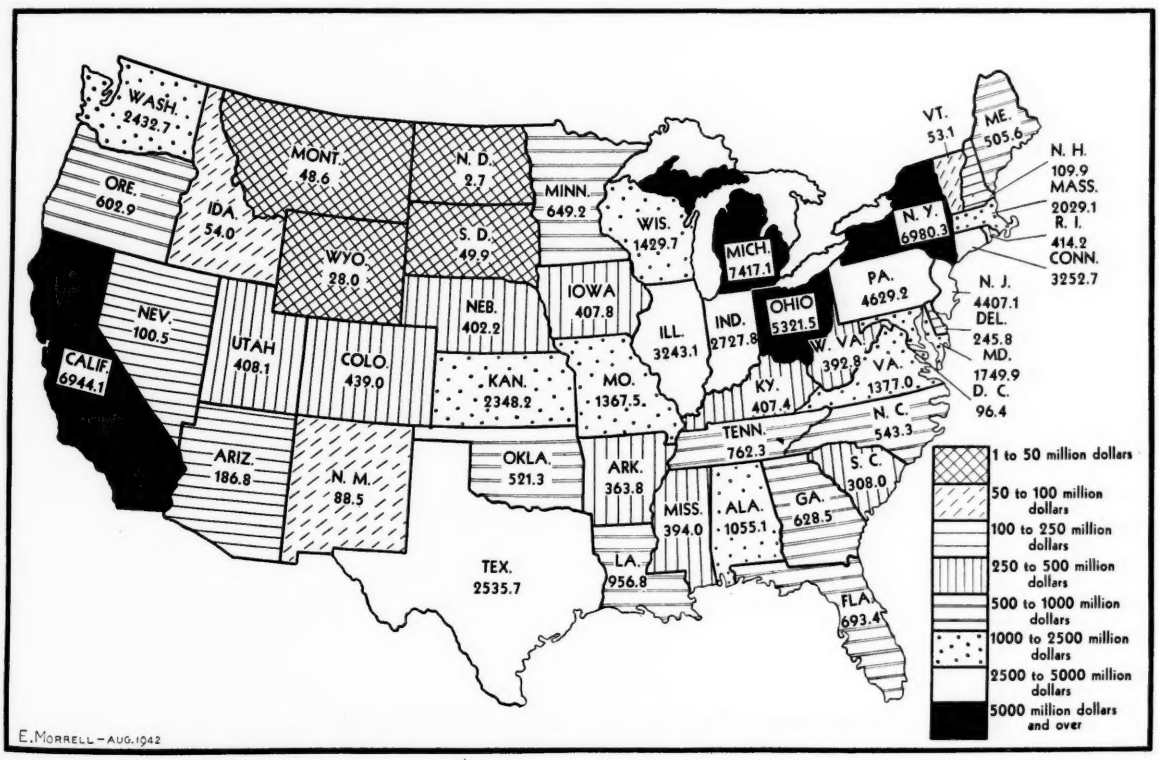
(Thousands of dollars)

State	Army, Navy and Maritime Commission Supply Contracts: Aircraft	Ships	Miscell.	Facilities: Industrial	Non-Industrial	Dept. of Commerce C.A.A.	National Housing Agency	Federal Works Agency	Federal Security Agency	Federal Loan Agency R.F.C.	Total
Alabama	.....	316,397	193,762	363,180	132,703	966	17,420	18,619	5,833	5,908	1,055,090
Arkansas	.....	.....	44,338	200,173	108,201	356	2,622	4,090	3,486	499	363,832
Dist. of Col.	.....	237	3,089	14,635	35,339	....	28,868	12,847	1,187	157	96,359
Florida	950	222,551	31,231	34,581	345,782	6,412	12,270	29,996	4,842	4,822	693,437
Georgia	.....	130,418	168,296	88,056	209,292	3,102	8,085	13,282	6,120	1,818	628,469
Kentucky	.....	.....	51,218	160,052	132,364	1,046	6,268	11,031	4,957	40,494	407,430
Louisiana	68,496	314,979	55,402	295,287	189,496	4,087	5,004	16,732	4,397	2,869	956,801
Maryland	683,201	338,080	335,119	170,832	139,962	....	40,670	14,255	3,426	15,759	1,749,883
Mississippi	.....	123,983	26,945	60,119	162,497	1,430	213	11,749	4,989	307	393,973
Missouri	121,754	1,506	561,406	509,403	124,701	310	....	30,085	5,314	3,973	1,367,545
North Carolina ..	.....	95,042	135,560	37,024	241,996	587	204	17,681	5,366	518	543,304
Oklahoma	160,776	.....	43,298	170,794	129,873	769	....	8,477	5,177	249	521,268
South Carolina ..	.....	10,800	97,240	38,228	117,376	2,664	....	26,573	3,230	140	307,988
Tennessee	79,167	14,030	203,794	287,412	156,494	253	115	9,430	5,253	1,223	762,305
Texas	501,099	263,166	223,612	819,707	637,094	6,726	158	46,165	12,875	4,907	2,535,722
Virginia	.....	564,195	78,156	203,835	414,625	112	2,382	30,994	4,835	784	1,377,014
West Virginia ...	.....	30,048	78,144	257,559	1,452	....	....	18,058	5,343	135	392,759
South	1,615,443	2,425,432	2,330,610	3,710,877	3,279,247	28,820	124,279	320,064	86,630	84,562	14,153,179*
U. S.	19,571,842	9,232,176	26,613,310	13,700,358	8,398,706	63,752	652,141	829,424	273,146	973,799	80,338,688*

*Includes $30,034,000 for the United States under the Farm Security Administration of the U. S. Dept. of Agriculture for defense housing; of this, $12,072,000 was for the South—Ala., $302,000; Ark., $67,000; La., $52,000; Md., $8,579,000; Miss., $213,000; N. C., $204,000; Tenn., $115,000; Tex., $158,000, and Va., $2,382,000.

"Aircraft" includes contracts for airframes; airplane engines, propellers, and other parts; and certain related equipment such as parachutes and aircraft pontoons, armament, instruments, and communication equipment are excluded. "Ships" includes contracts for the construction of new vessels of all kinds; the purchase of used ships; and ship conversion, recommissioning, and repair. Propulsion machinery (when separately contracted for), armor, armament, navigation and radio equipment, parts, and materials are excluded.

War contracts and allocations of all Federal agencies through June was $80,338,688,000. ***Of this,*** $14,153,179,000 ***has gone to southern states. Totals for each state in millions of dollars are shown in the map below.***



SOUTH'S CONSTRUCTION CONTRACTS HIGH FOR SEVEN MONTH PERIOD

South's Construction By Types

	July, 1942		Contracts Awarded First Seven Months 1942	Contracts Awarded First Seven Months 1941
	Contracts Awarded	Contracts to be Awarded		
PRIVATE BUILDING				
Assembly (Churches, Theatres, Auditoriums, Fraternal)	$218,000	$110,000	$3,576,000	$11,491,000
Commercial (Stores, Restaurants, Filling Stations, Garages)	202,000	55,000	4,145,000	18,027,000
Residential (Apartments, Hotels, Dwellings)	5,376,000	1,255,000	86,400,000	57,637,000
Office	.....	.....	997,000	10,632,000
	$5,796,000	$1,420,000	$95,118,000	$97,787,000
INDUSTRIAL	$194,991,000	$79,308,000	$911,324,000	$713,598,000
PUBLIC BUILDING				
City, County, State, Federal	$136,166,000	$87,850,000	$1,079,698,000	$410,005,000
Housing	29,779,000	12,405,000	166,014,000	79,558,000
Schools	1,788,000	3,369,000	23,333,000	16,395,000
	$167,733,000	$103,624,000	$1,269,045,000	$505,958,000
ENGINEERING				
Dams, Drainage, Earthwork, Airports	$16,316,000	$7,665,000	$274,536,000	$83,236,000
Federal, County, Municipal Electric	459,000	14,626,000	12,887,000	17,313,000
Sewers and Waterworks	3,919,000	24,993,000	46,475,000	12,098,000
	$20,694,000	$47,284,000	$333,898,000	$112,647,000
ROADS, STREETS AND BRIDGES	$13,934,000	$20,253,000	$105,943,000	$93,290,000
TOTAL	$403,148,000	$251,889,000	$2,715,328,000	$1,523,280,000

THE seven-month total for contracts awarded for Southern construction projects is an all-time high for any similar period. Totaling $2,715,328,000, the figure approaches within seven per cent of the total for the entire twelve months of last year.

Southern construction during July aggregated $403,148,000, a drop of nine per cent from the preceding month, but almost the same percentage ahead of the figure for the corresponding month of last year.

What the future holds for the construction industry is difficult of prediction. Many Southern communities have been particularly fortunate up to the present, mostly due to the important part they are taking in the war program.

The vagaries of war, however, change conditions from day to day and from hour to hour. Much depends on the foresight of those charged with the responsibility of quickly providing necessary factories, military and naval facilities and the housing required by large concentrations of migrant workers in war production centers.

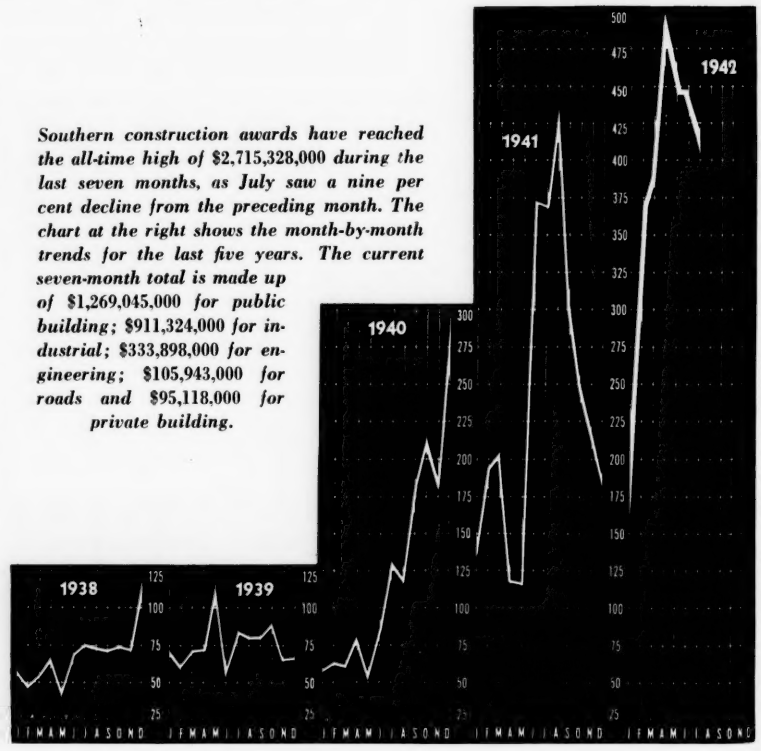
The present situation is so grave that it is the consensus in some circles that decisions on what projects can or cannot be carried out should be more carefully considered, so as to anticipate critical shortages with greater accuracy and thus avoid stoppages such as that at the Higgins ship yard in New Orleans.

The seven-month total of public building, exclusive of housing and schools, is $1,079,698,000, to which July contributed $136,166,000. School construction has dropped and may decline further with more intensive utilization of existing buildings and the slowing up of child education programs as adult training for war production is accelerated.

Public housing projects in the South have involved $166,014,000 in the last seven months, to which can be added the $86,400,000 poured into private residential projects. Additional construction of this type must be done to more adequately supply the pressing needs in many of the congested boom towns and cities. Public housing in the South rose thirty-six per cent to $29,779,000 during July.

Private residential work, however, declined fifty-nine per cent. Difficulties in

Southern construction awards have reached the all-time high of $2,715,328,000 *during the last seven months, as July saw a nine per cent decline from the preceding month. The chart at the right shows the month-by-month trends for the last five years. The current seven-month total is made up of* $1,269,045,000 *for public building;* $911,324,000 *for industrial;* $333,898,000 *for engineering;* $105,943,000 *for roads and* $95,118,000 *for private building.*



South's Construction By States

	July, 1942 Contracts Awarded	July, 1942 Contracts to be Awarded	Contracts Awarded First Seven Months 1942	Contracts Awarded First Seven Months 1941
Alabama	$5,729,000	$8,233,000	$95,054,000	$174,555,000
Arkansas	18,412,000	14,385,000	55,187,000	34,427,000
Dist. of Col.	18,074,000	19,068,000	57,298,000	37,871,000
Florida	24,855,000	9,383,000	184,630,000	69,092,000
Georgia	13,419,000	5,068,000	114,297,000	90,911,000
Kentucky	2,012,000	5,650,000	87,147,000	68,940,000
Louisiana	27,149,000	31,742,000	167,954,000	127,086,000
Maryland	14,353,000	1,743,000	143,433,000	80,219,000
Mississippi	12,744,000	7,070,000	138,301,000	36,910,000
Missouri	99,977,000	11,903,000	144,105,000	71,827,000
N. Carolina	12,880,000	7,944,000	146,491,000	71,156,000
Oklahoma	9,926,000	3,059,000	136,611,000	42,947,000
S. Carolina	11,389,000	1,398,000	58,786,000	42,647,000
Tennessee	84,047,000	21,580,000	215,592,000	138,117,000
Texas	41,906,000	76,717,000	724,124,000	282,739,000
Virginia	5,931,000	24,200,000	214,226,000	80,239,000
W. Virginia	345,000	2,746,000	32,092,000	73,597,000
TOTAL	$403,148,000	$251,889,000	$2,715,328,000	$1,523,280,000

obtaining materials are retarding many housing projects, both public and private. The drastic drop of private residential work, which for many months has represented the bulk of private construction, lowered this type of building to depression year levels.

Heavy construction, other than industrial, this year has amounted to $333,898,000, with July projects amounting to $20,694,000, the lowest since last November. War casualties, so to speak, are being announced in this field. The most noteworthy for July were the Blue Mountain and Clearwater dams being built under supervision of the Little Rock office of the United States Army Engineers. A stranger in the construction reports of the month was rural electrification work. Several new projects of this kind totaled $459,000. These, however, have since stopped.

Sewer and water construction dropped precipitately. The July figure was $3,919,000, as compared with $6,912,000 of the preceding month, and $3,962,000 for July of 1941. The seven-month figure for sewer and water work is $46,475,000. Last year at this time, this type of work had involved expenditure of $12,098,000.

Road work also was down, the total for July being $13,934,000; for June, $20,487,000; for the current seven months, $105,943,000; for the similar period of last year, $93,290,000. (S.A.L.)

Public Engineering

(Dams, Drainage, Sewers, Waterworks, etc.)

	July, 1942 Contracts Awarded	July, 1942 Contracts to be Awarded	Contracts Awarded First Seven Months 1942
Alabama	$.....	$935,000	$8,417,000
Arkansas	1,555,000	23,000	11,477,000
Dist. of Col.	596,000	4,435,000	1,126,000
Florida	1,750,000	115,000	62,461,000
Georgia	159,000	52,000	12,009,000
Kentucky	.....	.....	6,583,000
Louisiana	4,224,000	3,106,000	23,107,000
Maryland	895,000	765,000	5,870,000
Mississippi	2,414,00	120,000	21,133,000
Missouri	833,000	345,000	6,674,000
N. Carolina	.....	99,000	6,491,000
Oklahoma	172,000	215,000	4,452,000
S. Carolina	400,000	48,000	4,674,000
Tennessee	1,332,000	3,565,000	52,235,000
Texas	4,437,000	21,669,000	83,875,000
Virginia	1,927,000	10,540,000	12,919,000
W. Virginia	.....	1,252,000	10,395,000
TOTAL	$20,694,000	$47,284,000	$333,898,000

Industrial

(Including Private Utilities)

	July, 1942 Contracts Awarded	July, 1942 Contracts to be Awarded	Contracts Awarded First Seven Months 1942
Alabama	$550,000	$488,000	$11,285,000
Arkansas	4,000,000	4,210,000	5,590,000
Dist. of Col.	50,000	488,000	1,531,000
Florida	1,605,000	3,638,000	8,179,000
Georgia	100,000	689,000	29,137,000
Kentucky	120,000	5,000,000	30,539,000
Louisiana	4,595,000	14,300,000	83,249,000
Maryland	925,000	300,000	41,679,000
Mississippi	550,000	.....	40,711,000
Missouri	93,445,000	7,240,000	105,493,000
N. Carolina	6,000,000	6,498,000	8,104,000
Oklahoma	100,000	600,000	30,521,000
S. Carolina	125,000	479,000	3,878,000
Tennessee	75,990,000	300,000	88,664,000
Texas	6,586,000	34,295,000	402,333,000
Virginia	50,000	438,000	5,549,000
W. Virginia	200,000	345,000	14,882,000
TOTAL	$194,991,000	$79,308,000	$911,324,000

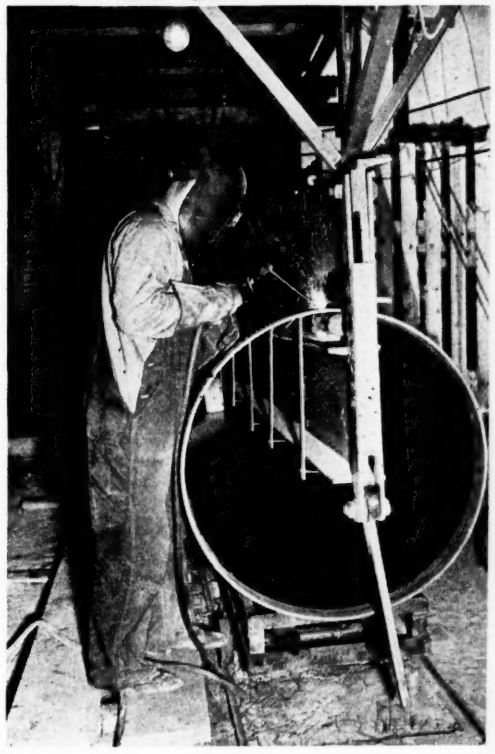
Public Building

(City, County, Federal; Housing; Schools)

	July, 1942 Contracts Awarded	July, 1942 Contracts to be Awarded	Contracts Awarded First Seven Months 1942
Alabama	$4,809,000	$6,360,000	$66,828,000
Arkansas	12,705,000	9,682,000	36,037,000
Dist. of Col.	16,212,000	9,695,000	39,836,000
Florida	18,810,000	4,565,000	101,575,000
Georgia	11,503,000	2,987,000	59,909,000
Kentucky	796,000	.....	45,265,000
Louisiana	17,179,000	12,491,000	55,834,000
Maryland	9,359,000	103,000	61,633,000
Mississippi	9,776,000	6,500,000	72,555,000
Missouri	4,688,000	2,803,000	27,789,000
N. Carolina	6,403,000	1,223,000	124,882,000
Oklahoma	8,429,000	2,244,000	97,290,000
S. Carolina	10,689,000	781,000	39,642,000
Tennessee	6,405,000	17,410,000	72,336,000
Texas	28,916,000	20,093,000	202,447,000
Virginia	1,022,000	6,638,000	163,399,000
W. Virginia	32,000	49,000	1,788,000
TOTAL	$167,733,000	$103,624,000	$1,269,045,000

Roads, Streets, Bridges

	July, 1942 Contracts Awarded	July, 1942 Contracts to be Awarded	Contracts Awarded First Seven Months 1942
Alabama	$370,000	$450,000	$8,188,000
Arkansas	100,000	470,000	451,000
Dist. of Col.	723,000	4,450,000	7,980,000
Florida	2,690,000	1,065,000	7,886,000
Georgia	1,657,000	350,000	7,903,000
Kentucky	1,086,000	650,000	4,690,000
Louisiana	1,037,000	1,845,000	3,728,000
Maryland	2,105,000	495,000	13,899,000
Mississippi	4,000	350,000	2,222,000
Missouri	891,000	1,470,000	1,532,000
N. Carolina	102,000	39,000	4,979,000
Oklahoma	1,098,000	.....	2,946,000
S. Carolina	.....	50,000	6,393,000
Tennessee	.....	250,000	738,000
Texas	1,108,000	660,000	15,038,000
Virginia	850,000	6,559,000	12,588,000
W. Virginia	113,000	1,100,000	4,782,000
TOTAL	$13,934,000	$20,253,000	$105,943,000



Above — Water shortage threats in the Hampton Roads area of Virginia are being met by construction of two reinforced concrete pipelines to towns in that vital point of United States defense operations. The scene at the top shown above are of the pipe laying on the $2,177,500 Chickahominy River line, which with the Nottoway River project, will cost almost $5,000,000. Lock Joint Pipe Co., of Ampere, N. J., general contractor, has established special plants for making the concrete pipe. The lower illustration shows a workman welding a form casing for one of the 16-foot long sections.

Important New Industrial Plants and Expansions in the South During July

ALABAMA

BIRMINGHAM — plant — Southern Steel Works Co., 903 Third Ave., W. erecting plant on North 41st St., East Birmingham, on 14 acre tract, will consist of assembly shop, receiving yard, main fabricating building, warehouse, machine shop and storage building.

CHILDERSBURG—cold storage—Nicholson Co., Inc., Childersburg, and New York, has contract for cold storage building for E. I. Dupont de Nemours & Co.; reinforced concrete.

ARKANSAS

Substation—L. O. Brayton, Dyersburg, Tenn. has contract for sub-station at alumina plant; work includes control house, oil storage, and auxiliary structures; Ark-La Electric Cooperative, Fort Smith, owner.

STAMPS—power plant—Arkansas Power & Light Co., Pine Bluff, started work on $3,000,000 electric generating station, 2 miles east of Stamps; capacity of 30,000 kw. an hour; plant will be so designed that 3 additional units may be added; grading the site, which will be 840 ft. long and 540 ft. wide is first work to be undertaken; stack for plant will be 150 ft. high; E. A. Edewaard, will be resident engineer for the plant; George Hewitt, hydraulic engineer. S. M. Dixon of Warren, has contract for excavating and moving 30,000 cu. yds. of dirt.

FLORIDA

JACKSONVILLE — building — Gallespie Construction Co., Inc., 220 W. Church St., has contract for building for Merrill-Stevens Dry Dock Co.; cost approximately $95,000; Hope Engineering Co., Engrs.

GEORGIA

ATLANTA—electrical work—Miller Electric Co., 556 Riverside Ave., Jacksonville, Fla., has contract for electrical work at Bellcraft for Marietta Aircraft Assembly Plant.

KENTUCKY

LEXINGTON—plant—E. P. May, N. Limestone St. & Bryan Ave., has contract for plant for Irving Air Chute Co., Versailles Pike; 1-story; brick, steel and concrete; cost $139,000; present location, W. Main St.

LOUISIANA

NEW ORLEANS—administration building—Gervais F. Favrot, Balter Bldg., has contract at $300,000 for erecting administration building for Higgins Corp.; Walter N. Moses, chief engineer of company.

NEW ORLEANS—plant building—George J. Glover Co., Inc., Whitney Bldg., New Orleans, has contract for construction of plant building for Ford Motor Co.; Albert Kahn, Archt., Detroit, Mich.

NEW ORLEANS—office—Chris Larsen Co., Maritime Bldg., has contract for office annex, fire station, addition and change to yard office, etc. at Louisiana Shipyards, Inc. on Florida Ave. at Industrial Canal; J. G. White Engineering Corp., Engrs., Interstate Bank Bldg.

SHREVEPORT—addition—Werner Co., has contract at $189,000 to construct addition to foundry of J. B. Beaird Corp., W. 59th and Dowell Sts.; Neild-Somdal & Neild, Archts.

MARYLAND

Shop and power house—Cummins Construction Corp., 803 Cathedral St., Baltimore, has contract at $186,400 for construction of shop and power house building for Bethlehem Steel Co., Shipyard division, 1101 Key Highway.

Converter building—Bethlehem Steel Co., Sparrows Point, has contract for converter building for Defense Plant Corp.

BALTIMORE — alterations — McLean Contracting Co., Fidelity Bldg., has contract for alteration to boiler house, and

Contracts Awarded

Morrow Brothers, 14 E. Eager St. has contract for alterations to pump house and new section crib building, Clinton St., for Standard Oil Development Co.; 1-story; brick.

BALTIMORE—addition—H. J. Dudley, 102 W. Chase St., has contract for 2 mill building additions, 1601 S. Highland Ave. for U. S. Defense Plant Corp., Revere Copper & Brass Co., Lessee; cost $10,000.

BALTIMORE — alterations — Charles R. Scrivener, Old Frederick Rd. and Charing Cross, has contract, for alterations to building, 101 N. Warwick Ave. for King Furniture Manufacturing Co., replacing roof.

BALTIMORE—warehouse—Delta Chemical Manufacturing Co., 1300 Western Ave., erect 2-story, concrete block warehouse; owner builds.

BALTIMORE — foundations — Booth & Flinn, Inc., 1942 Forbes St., Philadelphia, Pa., has contract for foundations for Bethlehem Steel Co.; cost $50,000.

FAIRFIELD—addition—Leimbach & Williams, Inc., 30 W. Biddle St., Baltimore, has contract at $59,000 for office building addition and service building for Maryland Dry Dock Co.

FAIRFIELD — buildings — Bethlehem Fairfield Shipyard, Inc., let contract to Cummins Construction Corp., 803 Cathedral St., Baltimore, for switch board building and welding building, both 1900 Frankfurst Ave.; cost $3,000 and $250,000.

RELAY—regange building—Frantz Construction Co., 10 W. Chase St., Baltimore, has contract for regange building for Calvert Distilling Co.; brick and concrete.

MISSOURI

Expansion program — Curtiss-Wright Corp., plans $3,000,000 expansion program at Lambert-St. Louis Municipal Airport; former building of Fisher Body Co., at 3809 Union Blvd. will be converted for airplane construction; erect addition to present factory; Albert Kahn, Inc., Detroit, Mich., Archt.; H. B. Deal & Co.

Addition—James Stewart Corp., 343 S. Dearborn St., Chicago, Ill., has contract for addition to manufacturing plant of North American Aviation, Inc.

MOUNTAIN GROVE — canning plant — Roscoe Stewart of Victory Canning Co., starting work on canning plant.

ST. LOUIS — alteration — Vernon Higbee Construction Co., 6504 Nashville Ave., has contract for shop building alterations, 20th and Locust Sts., for Union Electric Co. of Missouri, 12th and Locust Sts.

ST. LOUIS—addition—John S. Burdeau, has contract for 2-story addition to plant of Watlow Electric Manufacturing Co., 1320 N. 23rd St.; 36x40 ft.; concrete foundation designed by Building Products Co., 705 Chestnut St.

SPRINGFIELD — expansion — Springfield Gas & Electric Co., E. S. Willever, acting manager, plans a $228,000 power plant expansion; extend present boiler room at Phelps and Main Sts., 43 ft. to the east; will house a 1300 h.p. boiler with a 275 lb. steam pressure capacity; construction of foundation awarded to W. W. Johnson with boiler installation let to Stearns-Roger Manufacturing Co., Denver, Colo.; contract for building not let; will also install necessary pumps, fans, water heaters and other equipment necessary for operation of the boiler.

NORTH CAROLINA

MORGANTON — plant — Gillimore-Carmichael-Olson Co., P. O. Box No. 120, has contract, work to begin in 2 weeks defense plant to be operated by National Carbon Co., 30 E. 42nd St., New York.

SOUTH CAROLINA

GAFFNEY—building—W. T. Duncan has contract for 2-story brick building, 25x80 ft. with basement for George L. Stephenson, owner of Dixie Glove Co.

TENNESSEE

CHATTANOOGA — addition — Columbian Iron Works, 2501 Chestnut St. erect addition to plant; owner builds.

CHATTANOOGA — addition — Standard-Coosa-Thatcher Co., 18th and Walker Sts. erect addition to factory; brick; composition roof.

KINGSPORT—plant—Tennessee Eastman Corp., has contract for constructing a $3,000,000 manufacturing plant.

MEMPHIS — factory — Lee Construction Co., 1467 Lamar St., has contract at approximately $200,000 for factory for Caine Steel Co., 1820 N. Central Ave., Chicago, Ill.; Raymond B. Spencer, Archt., Memphis; A. E. Spengler, Engr., Los Angeles, Calif.

MEMPHIS—plant—L. O. Stocker, Arcade Bldg., St. Louis, Mo., has contract for manufacturing plant for McDonnell Aircraft Corp., Municipal Airport; W. J. Knight, Engr.; cost $1,000,000.

TEXAS

Building—War Department announced award of contract to Robert E. McKee, 1918 Texas St., El Paso, for temporary frame buildings; supervised by Albuquerque, New Mexico Engineer Office.

Oil storage—War Department announced award of contract to Builders Co., 207 Camp St., San Antonio, for oil storage facilities, Bexar County, supervised by San Antonio Engineer Office.

BEAUMONT — locker service — Consolidated Frozen Food Lockers Co., will install frozen food locker service at 1197 Franklin St. at cost of $20,000 exclusive of improvements to present building; lockers will be owner by Fred Noel, operating similar service at Port Arthur; unit will contain 850 lockers.

CORPUS CHRISTI — extension — Crocker Transfer & Storage Co., 1009 N. Broadway, let contract to J. W. Bermingham, 716 Mesquite St. for extension to building.

CORPUS CHRISTI — gasoline plant — Arthur G. McKee & Co., 2300 Chester Ave., Cleveland, O., has contract for high octane gasoline plant to be operated by Great Southern Corp. a subsidiary of Pontiac Refining Corp., Edwin Singer, Pres., 3400 Lawrence Drive, Corpus Christi; 4 recycling plants will supply raw materials from Stratton-Agua Dulce Gas & Distillate producing areas of Nueces county; plants include Lockhart Oil Co. of Texas; Gulf Plains Corp. and Coastal Recycling Corp.

DAINGERFIELD — ore plant — Austin Bridge Co., will be general contractor for $14,850,000 1200-ton blast furnace, 60 modern coke ovens, water works system, ore beneficiation plant, etc., to be erected by Defense Plant Corp. and leased by Lone Star Steel Co., John W. Carpenter, Pres., Dallas; Mosher Steel Co., 5101 Maple St., and Wyatt Boiler & Metal Works, 1901 W. Commerce St., all Dallas, will be identified with the work; plans also underway to construct $15,000,000 steel rolling mill to handle the output of the blast furnace; Fred F. Florence, Dallas, chairman of company's finance Committee.

GALVESTON — wharf — W. Horace Williams, 833 Howard Ave., New Orleans, La., has contract for wharf, Pelican Spit, for Todd Dry Dock Co.; 37x180 ft.; cost $491,000.

HOUSTON — optical glass — Benson-Marxen Co., 2006 W. Alabama St. has contract for erecting plant to manufacture optical glass for Walter Ruska & Co., in 3900 block of Bellaire Blvd.; cost $75,000; Mackie & Kamarath, Archts., 2017 W. Gray St.

HOUSTON—rubber plant—Lummus Co., 424 Broadway Ave., Houston, has contract for synthetic rubber plant, LaPorte & Gal-

veston Rds.; cost $35,000,000; Defense Plant Corp., Goodyear Tire & Rubber Co. and Sinclair Refining Co., owners; George A. Fuller, Engrs., Madison Ave., New York.

HOUSTON — plants — Construction work on synthetic rubber plants of Humble Oil & Refining Co., is being handled by Stone & Webster Engineering Corp. and E. B. Badger & Sons, both Boston, Mass.

HOUSTON — compressor building — Peden Iron & Steel Co., 700 N. San Jacinto St., has contract for compressor building, Irish Bend for Houston Shipbuilding Corp.; C. S. Adams, Engr.; 1-story; steel and frame, contract awarded was for iron and steel.

LONGVIEW — pipe line — Following have been awarded contracts for construction of 24-in., 550 mile emergency pipeline from Longview to Illinois for War Emergency Pipe Line Corp.; estimated cost $35,000,000; each of the contractors will build a single section of the line; contractors and sections awarded are: Williams Brothers, Tulsa, Okla., from Longview, to Arkansas-Texas state line; O. E. Dempsey Construction Co., Tulsa, from Arkansas-Texas state line to Gurdon, Ark.; Anderson Brothers, 113 N. Norfolk, Tulsa, from Gurdon, Ark. to Little Rock, Ark. (Arkansas River); Oklahoma Contracting Co., 1515 Magnolia Bldg., Dallas, Tex., from Little Rock to Missouri-Arkansas state line (St. Francis River); C. S. Foreman Co., New York Life Bldg., Kansas City, Mo., from St. Francis River to Illmo, Mo., (Mississippi River); Ray E. Smith Construction Co., El Dorado, Kans., from Mississippi River to Harrisburg, Ill.; Sheehan Pipe Line Construction Co., National Bank of Tulsa Bldg., Tulsa, Okla., from Harrisburg, Ill., to Norris City, Ill.; Sheehan Pipe Line Construction Co. also awarded contract to construct line from Norris City to Mount Vernon, Ind., and 10-in. branch line from Norris City to Enfield, Ill.; contract for construction of 8 river crossings awarded to Williams Brothers; line will cross Red, Little Missouri, Ouachita, Arkansas, Cache, White, St. Francis and Mississippi Rivers, the latter at point just below Cape Girardeau, Mo.; Lockwood, Kessler & Bartlett, Inc., 32 Court St., Brooklyn, N. Y. civil engineers and surveyors.

PORT ARTHUR — fabricating plant — Babcock & Wilcox, started work on steel fabricating plant; concrete foundation; structural steel corrugated iron sheds; office and machine shop; owner builds; receiving sub-bids.

PORT ARTHUR — plant — Stone & Webster, Port Arthur, engineers and builders on site and foundation work for styrene plant for making synthetic rubber for Dow Chemical Co., Midland, Mich.; cost $28,000,000.

SWEENEY — refinery — Paul Wood has contract for refinery for Abercrombie Oil Co.; cost $2,000,000.

TEXAS CITY — addition — Work underway on addition to plant of Republic Oil Refining Co.; manufacture high test aviation gasoline; Frick-Reid Supply Co., Tulsa, Okla., general contractor.

VIRGINIA

NORFOLK — building — V. T. Myers, Bankers Trust Bldg. has contract for building, 26th St. and Hampton Blvd. for Westinghouse Electric Supply Co.; 112 ft. long and 105 ft. deep; 1-story; brick and cinder block; Carnot Realty Corp., owner.

WEST VIRGINIA

COWEN — engine house — George F. Hazelwood Co., Howard St., Cumberland, Md., has contract for engine house for Baltimore & Ohio R. R., Baltimore, Md.

CONTRACTS PROPOSED

ALABAMA

MOBILE — phosphorous plant — TVA., Knoxville, Tenn. proceeding with preparations to construct a phosphorous plant near here; has Presidential approval; investment of $5,000,000.

ARKANSAS

Generating station—Southwestern Gas & Electric Co., Frank M. Wilkes, Pres., 428 Travis St., Shreveport, La., proposing erection of power generating station on Caddo Lake; gas steam type; initial capacity 30,000 KW.; cost $3,000,000; will be known as Lieberman Substation.

Pumping stations—War Emergency Pipe Line Co., W. Akton Jones, Pres., Longview, Tex., will establish 6 pumping stations in Arkansas, in connection with construction of $35,000,000 pipe line to be built from Longview to Illinois; stations will be located in Miller, Nevada, Grant, White, Independence and Clay counties.

Expansion—Report submitted to War Production Board recommending expansion of Defense Plant Corp., alumina plant in Saline County to cost approximately $12,000,000 and having an annual capacity of 1,300,000,000 lbs. for entire plant.

HELENA—pipeline—Gulf Refining Co., has had field surveys completed by H. Reeves, field engineer for Eby Engineering Co., El Dorado, for pipeline from White River to point on Highway 20.

POCAHONTAS—egg drying plant—C. E. Sidler and Robert Osborn, of Chicago, Ill., representing Dried Food Processors Corp., considering establishing plant with capacity of 16,000 lbs. dried egg powder a day; plans remodeling and installing machinery in Chester B. Franz Co.'s building, near Black River; John C. Johnson, president of Chamber of Commerce, interested.

WALNUT RIDGE—transmission line—Arkansas-Missouri Power Corp., 400 W. Main St., Blytheville, granted permission by State Utilities Commission, Little Rock, to construct a 34,500 volt line and sub-station; cost $22,632.

DISTRICT OF COLUMBIA

WASHINGTON — locomotives — Seaboard Air Line Railway Co. filed application with Interstate Commerce Commission covering proposed financing of 8 new Diesel locomotives at cost of $3,069,760; plans purchasing 6 freight locomotives, each having 5400 h.p., and 2 switching engines of 1000 h.p. each.

FLORIDA

Pipe line—Defense Plant Corp. will purchase an 8-in. pipe line from American Liberty Pipe Line Co. of Dallas, Tex., now operating between Longview and Houston, approximately 195 miles; will have pipe line and all appurtenances moved to Florida and relaid between Carrabelle on west side of Florida to Jacksonville on the east; line will carry gasoline and light oil, and have capacity of 35,000 bbls. daily; to remove pipe line and all equipment and facilities and provide new terminals, will require a total expenditure of $2,900,000, including cost of pipe line; pipe line can be in operation in approximately 4 months and oil barges can be made available from existing facilities, new oil barges will also be built.

Barge canal and pipe line—President Roosevelt signed bill authorizing construction of a barge canal and oil pipe line across Florida; pipe line will traverse State from Gulf of Mexico to the Atlantic, a pipe line will be laid from North Mississippi to either Savannah, Ga. or Charleston, S. C.; improvements to and extension of intracoastal water way along the Gulf and Texas coasts will be permitted; cost, which will be met through emergency funds, will be $93,000,000; of this amount $44,000,000 will be for canal; authorized work will consist of lock canal equipped with 5 locks to carry barge traffic across, between 42 and 55 ft. above sea level; estimated time for construction 3 years.

JACKSONVILLE — shipyard — Merrill-Stevens Dry Dock & Repair Co., requested city to lease to it city-owned property under E. Adams St. viaduct for expansion project.

MIAMI—shop buildings—Intercontinent Aircraft Corp., Irwin Williamson, 4700 N. W. 36th St., Plant Engr., construct 2 shop buildings, 4700 N. W. 36th St.; 1-story; concrete, brick and stucco; work by company's forces.

MIAMI—aircraft—Vultee Aircraft, Inc., Don I. Carroll, V. P. acquired Intercontinent Aircraft Corp. of Miami; plans expansion.

SANTA ROSA—barges—S. N. Cox is president of local organization, interested in establishment of plant for manufacture of wooden barges; has tentative site on riverfront off S. Willings St.

GEORGIA

ATLANTA — superstructure — Simonens-Emerson and Ammidown, 101 Park Ave., New York, additional estimator, bids opened July 29, for superstructure for aircraft assembly plant for U. S. Engineer, Bellcraft.

ATLANTA—power lighting—U. S. Area Engineer, Bellcraft, received bids July 17, for power and lighting wiring Marietta Aircraft Assembly Plant, Bellcraft. Bids opened July 24 for $250,000 storage building. Robert & Co., Engrs., Bellcraft.

KENTUCKY

LOUISVILLE—butadiene plant—Carbide & Carbon Chemicals Corp., New York, wholly owned subsidiary of Union Carbide & Carbon Corp., has site of 153 acres in Southwestern Ohio River industrial district for butadiene plant.

LOUISIANA

Pipe line—Shell Oil Co. Inc., Slattery Bldg., Shreveport, La., contemplates construction of oil pipe line through St. Landry Parish, a continuation of Plantation Pipe Line Co.'s line from Baton Rouge to North Carolina; preliminary work underway.

Pipe line—Federal Power Commission will hold hearing, Aug. 3, on an application by United Gas Pipe Line Co., Shreveport, for authority to construct and operate approximately 38 miles of 12¾-in. O. D. natural gas pipe line in nature of a loop of its facilities from Lake Long field in Lafourche Parish to a point near St. Rose, where the line would connect with company's Baton Rouge-New Orleans line; company has applied to War Production Board for necessary authority and priority rating to obtain pipe, etc.; estimated cost of loop $1,090,000.

Tung oil plant—P. F. Lawson, 1842 Corley St., Beaumont, Tex., revising plans for establishment of tung oil plant in Louisiana-Texas area.

HOUMA—boat unit—Dixie Shipyard has leased the Houma Boat & Contracting Co. on Bayou Terrebonne, including 4 sets of ways.

LAKE CHARLES — refinery — Calcasieu Parish citizens voted to grant Cities Service Oil Corp., exemption from local ad valorem taxes for a period of 10 years, in connection with establishment of $100,000,000 oil refinery in the parish; work in preliminary stages.

NEW ORLEANS—carpenter shop, etc.—J. G. White Engineering Corp., Interstate Bank Bldg., received bids July 15 for construction of carpenter shop, electrical shop, police headquarters and extension to hatch over storage building at Louisiana Shipyards plant on Florida Ave.; following are prospective estimators: Otis W. Sharp & Son, Inc., 1838 Robert St.; Pittman Brothers Construction Co., 2800 N. Galvez St.; Gervais F. Favrot, Balter Bldg.; John Riess, Carondelet Bldg.; Boh Brothers Construction Co., 2400 Cypress St.; Lionel F. Favret, 937 Gravier St.; George J. Glover Co., Inc., Whitney Bank Bldg.; Chris Larsen Co., Maritime Bldg.; Burkes Brothers, Stern Bldg.; Perrilliat-Rickey Construction Co., S. Rendon & Eve Sts.; Reimann Construction Co., 618 S. Gayoso St.; A. N. Goldberg, Maison Bldg.; Hyman Rabinovitz, Inc., 740 Poydras St.; C. Earl Colomb, 235 N. Peters St.

MARYLAND

FAIRFIELD — paint shop — Bethlehem-Fairfield Shipyard, received bids July 28 for paint shop; 1-story; brick and frame; Consolidated Engineering Co., 20 E. Franklin St. and Cummins Construction Corp., 803 Cathedral St., both Baltimore, estimating.

MIDDLE RIVER—laboratory—Glenn L. Martin Co., received bids July 6 for laboratory building; block; 2-story; Albert Kahn & Associates, Detroit, Mich., Archts.; following are prospective estimators: Consolidated Engineering Co., 20 E. Franklin St. and Cummins Construction Corp., 803 Cathedral St., both Baltimore; Henry W.

(*Continued on page 56*)

SUB-CONTRACTORS WANTED

For information, blue prints, specifications, etc., on the following items write or telephone the Philadelphia office of the War Production Board, quoting the symbol number of the item in question. You will then be put in touch with the engineer assigned to that item. Please quote the Manufacturers Record.

Ref. Barker-43-1

A Pennsylvania firm seeks subcontracting facilities for Machining Valve Trap Bodies. Prime contractor will provide necessary blocks of SAE 1020 or SAE 1120 Steel, approximately 4¾″ x 3″ x 3″, and also tools to do the work on a 3-ft. Radial Drill.

Ref. Dorr-42-1

A Penna. manufacturer wishes to locate facilities for Polishing Machined Forgings for Surgical Instruments. Material: Steel. Equipment for polishing small Machined Forgings necessary for this work; Forgings to be supplied by prime contractor. Quantity: Large number. Samples may be examined at the Philadelphia office.

Ref. O'Hara-37-1

A Penna. concern is seeking subcontracting facilities for Machining of High, Low and Intermediate Cylinders of Triple Expansion Engines in diameters of 24½″ and 70″ bore. Necessary tools are Vertical Boring Mills, ranging 8′ and over, with 10′ head clearance; Horizontal Boring Mills, with 4″ to 6″ bars.

Ref. Barker-33-1

A Michigan manufacturer urgently requires subcontracting for AVIATION MOTOR COMPONENTS. Plain and Stepped Studs, Square and Hex Head Bolts, Castle and Sleeve Nuts, Taper and Special Pins, Special Screws and Bushings, Washers, Plugs, Caps, Nipples, Rocker Shafts, Cam Shaft Rocker Tappets, etc. Quantities: Varying, minimum 14,000 each of more than 100 different items. Material mostly AMS 6310 and 5024 Steel Bar. Minimum tolerance .001. Following tools or equivalent required: Screw Machines, Light Milling Machines, Drilling, Facilities for Precision Grinding, Heat Treating, Hardness Testing, Cadmium Plating. Prints, specifications, exhibit samples and all information at the Philadelphia office.

Ref. Cruse-42-1

A Michigan firm is looking for subcontracting facilities for the manufacture of Connecting Ends. Required material: W D 4140 Spec. 57-105. Tolerances: + — .005. The quantity needed is 648,000 pieces, production to start as soon as possible and to be as rapid as possible. Equipment necessary for this work: 2000# Forging Hammers, #2 Cincinnati Millers, and 1¼ Drill Press. Blueprint can be seen at the Philadelphia office.

Ref. Cruse-42-2

A Penna. concern requires subcontracting facilities for Machining 30 Kingposts for BAPM Ships, D-2352 AHB. Material, to be furnished by prime contractor, is Low Carbon Steel. Tolerances required: 0.004 and 0.00125. Quantity: 30 pieces, weight of each 37,500#. Production, to start by October, is to be at the rate of four per month. Equipment necessary for this work is: Lathe, 60″ swing x 32′ long; and 25 ton Crane Capacity. Priority rating is A-1-b to A-A. Blueprint is on file at the Philadelphia office.

Ref. Cruse-43-1

A Pennsylvania concern is looking for subcontracting facilities for Swivel and Elevating Sockets, Single; Swivel and Elevating Sockets, Twin; Castings, Brass or Malleable. Material required is Brass, 80,000 Tensile Strength; Malleable, 55,000 Tensile Strength. Material, as well as Patterns and Fixtures, to be furnished by contractor. Tolerances required: .002. Quantity: 25 to 50 pieces per day and production to start soon. Equipment necessary for this work is: 1″ Horizontal Boring Mills, #4 Cincinnati Miller, and Drill Press. Contract by negotiation. Prints and specifications can be seen at the Philadelphia office.

Ref. Cruse-43-2

The Government requires subcontracting facilities for two Self Adjusting Drag Heads, three Extra Heel Pads, and three Extra Grates. Material: Class B Medium and Chrome Nickel, to be furnished by subcontractor. Production to start as soon as possible and rate of production to be as rapid as possible. Equipment required is: Steel Foundry, Boring Mill and Drill Press. Contract by negotiation. Prints and Specifications can be seen at the Philadelphia office. Patterns furnished by U. S. Government.

Ref. Cruse-43-3

Subcontracting facilities are required by the Government for the following: Two Reverse Valve Bodies, Two Reverse Valves, and Eight Stuffing Boxes. The material required is Cast Iron, and is to be furnished by subcontractor. Tolerances required — Commercial. Production to start as soon as possible and to be as rapid as possible. Equipment required: Lathe, H. B. Mill to 8″ hole, 4 x 10′ planer, Drill Press. Prints and specifications are on file at the Philadelphia office. Patterns furnished by U. S. Government.

Ref. Eser-23-1

An Eastern Penna. concern is seeking subcontracting facilities for the Machining of Heavy Grey Iron Castings. Weights will approximate 10,000 to 12,000 lbs. each. These Castings are for low, high and intermediate Cylinders, Pistons and Beds for Triple Expansion Engines. Tool requirements are Heavy Engine Lathes, Large Planers and Vertical Boring Mills. Prints and specifications can be seen at the Philadelphia office.

Ref. Eser-44-1

A Massachusetts concern is looking for Grey Iron Castings for 80 each Marine Engine Frames weighing 35,000 lbs. and 55,000 lbs. Also Machine Tool Castings, large quantity, weighing 10,000 lbs., 15,000 lbs. and 28,000 lbs. This request carries an A-1-A priority rating. For further information inquire at the Philadelphia office.

Ref. Jackson-43-1

A Penna. firm wishes to locate subcontracting facilities for the manufacture of 700 Incidence Controlled Slides, size 9½″ x 1″ x ¼″. Material: Steel #4130, Sheet or Bar, furnished. Heat Treating by Prime Contractor. Machine tools necessary for the work are as follows: Small Pantograph; #1 Milling Machine; Jig Borer; Close Tolerance Grinding Facilities; Cadmium Plating Facilities. These parts are urgently required. Plans and specifications are on file at the Philadelphia office.

Ref. Jackson-43-2

A Penna. company desires to locate facilities for making sixty Washers, 4″ in diameter x ¼″ thick and sixty Washers, 3″ in diameter x ¼″ thick (approximately 2″ hole). Equipment required: Lathe, 6″ swing; Jig Borer; Small Drill Press; Small Milling Machine; Cadmium Plating Facilities; Close Tolerance Grinding Facilites. Material to be supplied by prime contractor. These parts are urgently required. Plans, specifications, and blueprint are on file at the Philadelphia office.

Ref. Keefer-42-1

A Connecticut concern requires subcontracting facilities for the production of 30 Caliber Armor Piercing Bullet Core Blanks. Material required is: Steel, Cold Drawn, Manganese-Molybdenum. Tolerances—Liberal. Quantity to be produced: 6,000,000 per week. Necessary equipment—Battery of ten (10), or at least a battery of five (5), Brown & Sharpe, #00, #0, #2, or EQUAL, Automatic Screw Machines — Single Spindle. Prints and specifications can be seen at the Philadelphia office and samples are on view at the Exhibit Room.

Ref. Keefer-43-1

A Missouri concern requires subcontracting facilities for the manufacture of Fuze Adapter, size 1¾″ O.D., length overall 2.12″, external and internal threading, finish "f." Material: Steel—WDX—1314 Cold Drawn. Alternate Material: Steel—WDX—1112 Cold Drawn. Tolerances + or — .02″. Quantity to be produced—90,000 at the rate of 20,000 per month; 5,000 to be delivered by the latter part of August. Multi-spindle Automatic Screw Machines needed for this work. Prime contractor states that from previous experience, proper price on this part should be between .30 and .35 cents including material and labor f. o. b. the manufacturer's plant. Blue print on file at the Philadelphia office.

Ref. VanValkenburgh-32-1

A Maryland manufacturer wishes to locate indefinitely continued subcontracting facilities for Aircraft Propeller Hubs in two different sizes. Material, SAE X4340 Steel. Quantities: 50—100—250 and 500 per month as prime contract goes into production. Quotations divided into three separate classes for each size hub. 1st, Forgings only. 2nd, Machining Forgings only. 3rd, Dies and Tools only. Approximate component sizes as follows: Smaller Forging for Blades 7″ x 5½″ x 6⅝″, finished machined length 6¾″, diameter 6½″, boring for Blades 5⅛″, cross boring for Engine Shaft 2.41″. Larger Forging, 7¼″ x 7¼″ x 6⅜″, finished machined length 7″, diameetr 7⅛″,

(Continued on page 52)

NEW PRIORITIES

PUT IN EFFECT DURING JULY

Agar—M-96 Amend. #2 enables Defense Supplies Corp. to build a stockpile from inventories frozen by original order.

Air Conditioning Machinery and Equipment (Industrial and Commercial Refrigeration)—L-126 requires immediate reduction in sizes and types of drinking water coolers and refrigeration condensing units. P-126 Amend. #1 provides high preference ratings until Sept. 30, for deliveries of materials needed for emergency repairs. L-38 Amend. #3 assures more efficient administration of the order.

Alcohol—M-31 (as amended) Amend. #5 extends original order indefinitely.

Aluminum—M-1-h places both bauxite and alumina under complete allocation control. Use forms PD-567 and 568.

Anti-Freeze—L-51 Amend. #1 eases inventory restrictions of Prior. Reg. #1 on anti-freeze made from alcohol.

Asbestos Textiles—M-123 (as amended 7-4-42) permits use in manufacture of brake linings, clutch facings and other woven friction materials without A-10 rating.

Bicycles — L-52 Amend. #1 permits manufacture of approximately 100,000 Victory models between July 1 and August 31.

Canning (Maintenance and Expansion of Plants)—P-115 (as amended 7-29-42) assigns same ratings as to canners for persons engaged in freezing, dehydrating, or fresh packing of fruits and vegetables. Use forms PD-285 and 81A.

Cans Made of Blackplate — M-136 limits use to small list of essential products.

Cans Made of Tinplate or Terneplate —M-18-b prohibits use, sale or manufacture after Sept. 30 of lubricating oil cans made of any metal.

Caskets, Shipping Cases and Burial Vaults—L-64 Amend. #1 permits manufacturers to continue use of metal reinforcing now in inventory until Dec. 31.

Cattle Hides, Calf and Kip Skins—M-194 places entire supply of domestic hides and skins under complete allocation control: use forms PD-569, 569A, 569C and 569D. M-194-a fixes July 25 as date by which applications must be made for skins.

Cellophane and Similar Transparent Materials made from Cellulose — L-20 Amend. #1 permits cellophane window cartons for food products.

Chemicals—M-19-a places entire supply of high test calcium hypochlorite and chloride of lime under complete allocation control: use form PD-574. M-184 places complete control over distribution of aniline. M-112 (as amended 7-11-42) revises control over antimony. M-152 Amend. #1 simplifies procedure by which users of small amount of arsenic may place orders: form PD-490 no longer required by buyers of less than 500 pounds per quarter. M-191 establishes complete allocation control for lithium compounds effective Sept. 1: use forms PD-585 and 586. M-27 Amend. #2 extends indefinitely the order on phenols.

Chromium — M-18-a Amend. #3 extends order indefinitely. L-128 Amend. #1 lifts restrictions of original order applying to use of chromium and nickel in automotive valves on manufacture, sales and deliveries for Army, Navy and Maritime Commission.

Church Goods — L-136 Amend. #1 states order does not apply to silk woven or knitted into cloth or other finished products before June 13.

Coffee—M-135-c increases quotas in 204 counties in 42 states beginning August.

Communications—P-129 (as amended 7-28-42) provides higher preference ratings to obtain copper necessary for operation. P-130 (as amended 7-28-42) assigns higher preference ratings for deliveries of copper for operating construction by telephone companies.

Construction—L-41 Amend. #2 liberalizes non-essential construction order in several respects.

Copper—M-9-c (as amended 5-7-42) Amend. #3 adds a "Military Exemption List" to original order to permit manufacture of binoculars and valves for ships after August 1. M-9-c, as amended 5-7-42) Amend. #4 adds a number of items to "Military Exemption List" in which copper is not limited when ordered by Government agencies. P-58 (as amended 7-14-42) assigns higher preference ratings for copper mines, for copper producers, in South America, for maintenance and operating supplies. M-9-c-4 forbids use of copper and copper base alloy in building construction.

Cotton Duck — M-91 Int. #1 defines "enameling duck" in original order.

Cotton—M-117 Amend. #1 places domestic and foreign long staple cotton under rigid restrictions. M-197 places American Extra Staple Cotton, top grades of SXP, Pima and Sea Island cotton under strict control. M-12 (as amended 7-22-42) forbids delivery of cotton linters and hull fiber except to designated makers of chemical cotton pulp: use form PD-110.

Diamond Dies — M-181 establishes complete control over production, delivery and use of small diamond dies. Use forms PD-559 and 560.

Domestic Cooking Appliances—L-23-c Amend. #1 revokes a provision of the original order. L-23-c Amend. #2 permits manufacturers to figure allowed consumption of iron and steel, subsequent to June 30, on a quarterly rather than a monthly basis. L-23-b Amend. #1 releases all electric ranges in hands of dealers as well as ranges having factory sales value of $80 and over in the hands of distributors and manufacturers: use form PD-423.

Domestic Sewing Machines — L-98 Amend. #1 gives manufacturer an additional two months in which to manufacture repair parts.

Elevators—L-89 places rigid control over manufacture and delivery of elevator equipment and certain types of elevators: use forms PD-411 and 562. L-89 Amend. #1 excepts hand elevators and electro-hydraulic elevators from terms of original order.

Exports of Critical Material—M-148 Amend. #2 contains new list of materials for which export orders to other American republics will be given preference over other orders.

Farm Machinery and Equipment — L-26 (as amended 7-14-42) is a re-issuance of order to codify the original order and amendments. Use forms PD-387-388.

Fats and Oils—M-71 Amend. #2 extends original order indefinitely.

Feminine Apparel—L-85 (as amended) consolidates original order and amendments into one order. Also transfers to L-85 from M-73-a clothes for young boys (sizes two through six).

Fire Protective Equipment—L-39 (as amended 7-11-42) imposes further restrictions on manufacturing and applies same to stirrup pumps.

Fishing Tackle — L-92 Int. #1 exempts lures, baits and flies from order provided no critical materials are used other than iron or steel in fish hooks.

Fuel Oil—L-56 Amend. #1 returns to normal the deliveries to consumers in Oregon and Washington. L-56 Amend. #2 further restricts deliveries on Atlantic Coast until Sept. 15.

Furnaces — L-22 Int. #1 makes it clear that no restrictions are placed on manufacture of parts.

General Inventory Order — M-161 Amend. #3 provides that salt (sodium chloride) in bulk be added to Schedule "A."

Hand Tools Simplification—L-157 requires simplification of sizes and standards of all hand tools. L-157 Sched. I adds hand shovels, spades, scoops and telegraph spoons to original order.

Heavy Power and Steam Equipment —L-117 Amend #1 permits contractors to extend preference rating certificates to obtain delivery of heavy power and steam equipment on orders issued to the persons the construction is for.

Imports of Strategic Material—M-63 Amend. #2 places silver ores, bullion, concentrates, coins, compounds and semi-processed items on restricted importation list: use forms PD-222c and 222a. M-63-a (as amended 7-15-42) provides that goods on List III may move without restriction if shipped overland or by air from Canada or Mexico.

Incandescent and Fluorescent Lamps —L-28 Amend. #2 includes Panama Canal in group of agencies given 90-day exemption from restrictions of order regarding use of critical material in making lamp bulbs or tubes.

Industrial Power Trucks—L-112 imposes strict control over production and distribution. Use form PD-385.

Kapok—M-85 (as amended to 7-2-42) extends period in which dealers may sell to kapok manufacturers.

(*Continued on page* 40)

New Priorities Put In Effect During July

(*Continued from page* 39)

Kitchen, Household and Similar Articles—L-30 Amend. #4 extends through July the restrictions on use of iron, steel and zinc. L-30 Amend. #5 further extends restrictions through Aug. 15.

Laundry Equipment (Commercial and Dry Cleaning Machinery)—L-91 Int. #1 states that restrictions of order applies to machinery which cannot be used effectively by purchaser unless rebuilt or reconditioned.

Lead—M-38-j sets July lead pool at 15% of May production and sets pool until further notice.

Leather (Sole)—M-80 (as amended 5-22-42) Amend. #2 restricts leather set aside in original order for use only in shoes or repair leather purchased for specified military purposes.

Lumber (Construction) — L-121 (as amended 7-10-42) extends the "freeze" order till August 13.

Madagascar Flake Graphite — M-61 (as amended 7-7-42) permits jobbers to acquire crucibles made of this material without authorization. Control over deliveries still retained by WPB. Use forms PD-575 and 303B.

Mahogany and Philippine Mahogany —M-122 Amend. #1 permits dealers to replenish stocks of war-grades which have been delivered for purposes specified by the order.

Manila Fiber and Cordage—M-36 (as amended 7-4-42) restricts processing, sale and delivery of Manila cordage by almost 50 per cent.

Metal Household Furniture — L-62 Amend. #3 permits manufacturers to assemble until Sept., fabricated metal parts they had on hand as of March 20, 1942.

Metal Office Furniture and Equipment — L-13-a Amend. #3 terminates manufacture of metal shelving except by authorization; use form PD-423. L-13-a Amend. #4 permits manufacturers of metal shelving to fill shelving orders of the Army, Navy and Maritime Commission until Aug. 1 provided no new steel is sheered for same.

Metal Plastering Bases and Accessories—L-59 Amend. #2 cuts production by 60 per cent for period beginning July 1 for four months.

Metal Signs—L-29 Amend. #2 permits manufacturers to dispose of frozen inventories of iron and steel in conformity with Prior. Reg. 13.

Military Insignia (Officers) — L-131 restricts use of critical materials in manufacturing. Use form PD-417.

Motor Fuel—L-70 (as amended) establishes the buffer zone in which gas deliveries will be cut 25 per cent.

Motor Trucks, Truck Trailers and Passenger Carriers—L-158 governs production of spare parts for all types of automotive equipment and supercedes L-35, L-4 and L-4-c. L-1-g Amend. #1 makes it clear that order applies to passenger trailers. L-1-e Amend. #1 permits manufacture of not more than 500 giant "Off-the-Highway" trucks for use by mining and other essential industries and for export. M-100-a requires a country-wide inventory of new commercial motor vehicles: use forms PD-570, 572, 571A and 571. M-100 Amend. #2 redefines the term "new commercial motor vehicle."

Office Machinery—L-54-c Amend. #1 states that production quotas of L-54-c do not include machinery not covered by restrictions on distribution imposed by order.

Paper—L-120 places control over writing paper, envelope, book and ordinary tablet paper as to simplification and standardization with schedules #1, 2, 3, 4 and 5 attached to order.

Petroleum (Aromatic Solvents)—M-150 Amend. #1 places xylol and xylol range aromatic materials under strict control.

Phosphate Plasticizers—M-183 places entire supply, production and use under full allocation control. Use forms PD-557 and 558.

Plastics (Thermoplastics) — M-154 Amend. #1 postpones scheduling of manufacturer's operations until Aug. 15.

Plastics Molding Machinery—L-159 places restrictions on production and delivery. Use form PD-554.

Portable Electric Lamps and Shades —L-33 Amend. #3 permits manufacturers to use up existing supplies of fabricated metal, metal parts and lamp cords.

Power, Steam and Water Auxiliary Equipment—L-154 Amend. #1 to Sch. #1 permits manufacturers to use up to 60 per cent of inventory of parts and materials on hand July 1, in making water meters. Remaining 40 per cent is frozen.

Projects, Defense—P-19 Amend. #1 limits builders to materials which are to be physically incorporated in the projects and to certain "expendable material." P-19-a Amend. #2 adds to original order certain "expendable materials" consumed in construction of the projects. P-19-h Amend. #1 permits builders operating under P-19-a and P-19-h to use rating assigned by order to obtain expendable items which are not actually incorporated in project.

Pyridine — M-185 places production and distribution under complete allocation control. Use forms PD-604 and 605.

Quartz Crystals—M-146 Amend. #1 permits more uses to be made of quartz crystals.

Rayon Staple Fiber—M-176 provides for allocation of viscose rayon staple fiber and rayon staple fiber to wool manufacturers.

Rubber and Rubber Products—M-15-b-1 Amend. #7 establishes specifications for manufacturing airplane tires. M-15-b-1 Amend. #8 establishes specifications governing use of rubber in insulated wire and cable to make them applicable to all military uses. M-15-b-1 Amend. #9 further conserves rubber by more stringent specifications for long list of civilian articles. M-15-b-1 Amend #10 changes specifications for rubber footwear. M-15-b Amend. #11 prohibts sale or transfer of balata except under regulations prescribed by Government agencies and prohibits use except for authorized purposes. M-15-b Amend. #13 removes limitation on accumulation of stocks of reclaimed rubber in hands of reclaim consumers. M-15-t restricts use of rubber cements and adhesives in a specified list of articles.

Rubber Yarn and Elastic Thread—M-124 Amend. #4 makes Defense Supplies Corp., sole purchasing agent for rubber yarn, latex yarn and elastic thread frozen by original order. M-124 Amend. #5 restricts use in foundation garments designated as surgical garments.

Shearlings and Other Wool Skins—M-94 (as amended 7-30-42) provides that shearlings other than grade #4 may be processed and sold only to fill orders for Army Air Corps. Use form PD-421.

Shellac—M-106 (as amended 7-31-42) places all shellac, except for specified uses, under complete allocation control. Use form PD-617.

Silk Hosiery (Used)—M-182 freezes all used silk hosiery in hands of dealers.

Silk Waste, Noils and Garnetted or Reclaimed Silk Fiber—M-26 (as amended 7-11-42) permits processing, sale or delivery only for use by Army, Navy, Maritime Commission or War Shipping Board.

Silver—M-199 restricts civilian use of foreign silver and places restrictions on sale, purchase and manufacture of silver.

Sitka Spruce Logs—M-186 freezes all such logs of grade 1 and 2 in hands of owners as of July 20 and prohibits their processing after that date. Use forms PD-593 and 594.

Smelters and Refiners (Non-Ferrous) —P-73 (as amended 7-14-42) exempts smelters and refiners of 13 non-ferrous metals from filing PRP applications for third quarter of 1942.

Spices—M-127 Int. #1 clarifies method which food processors, manufacturers of medicines and other types of industrial receivers and packers use in computing their monthly spice quotas.

Springs and Mattresses (Bed)—L-49 Amend. #2 extends order through July.

Steel and Iron—M-21-g sets maximum specifications for use of heat-resistant chromium of chromium-nickel, alloy iron and alloy steel. M-24-a Amend. #1 extends to counties in Kansas, Missouri and Texas the segregation of tinned and detinned scrap. M-126 (as amended 7-13-42) prohibits manufacture of an additional list of civilian articles: use forms PD-437 and 509. M-21-e (as amended 7-11-42) permits use of tin and terneplate which had been in process on May 16 for repairs regardless of ratings. M-21-b Amend. #6 permits steel warehouses to continue filling emergency orders for small amounts of steel. M-21-c (as amended 7-27-42) restricts deliveries to ratings of A-1-k or higher, with certain exceptions: use forms PD-298 and 299.

Sugar—M-98-a (as amended 7-29-42) provides entire year's allocation to American refiners of raw cane sugar, both imported and domestic.

Sunn Hemp and Sunn Hemp Products —M-187 restricts use to manufacture of marine oakum.

Supplies—L-63 Exemp. #7 exempts wholesalers and distributors in U. S. Territories and Possessions from restrictions of original order.

(*Continued on page* 56)

XUM

Clear the Lines for the War

Before you make a Long Distance telephone call today, ask yourself these questions:

1. Is it necessary?
2. Will it interfere with war calls?

The weight of war on the telephone lines is heavier every day. We can't build the new lines to carry it because sufficient materials aren't available. We've got to make the most of the service we now have.

Please give a clear track to the war effort by confining your Long Distance calls to those that are really necessary.

WAR CALLS COME FIRST

BELL TELEPHONE SYSTEM

A Challenge to Business Leadership in the South

(*Continued from page* 21)

parts of the South takes the responsibility to organize and see it through.

In some instances, it means a shifting from certain customary low-value crops to more profitable crops—as corn or cotton to beef and dairy cattle, for example. In others, it means surveys of areas to determine the crops of their best adaptability, and the encouragement of such specialized crops in those areas in sufficient concentration to justify the location of modern processing plants. In other instances, it means modernized marketing facilities and business procedure.

The South should plan to use its non-agricultural labor in more profitable industrial employment. This is important first, because it will give it larger purchasing power, and second, because it would reduce the over-crowding of farm population. To that end, it should construct a larger number of, and more profitable industries where resources and other factors provide commercial advantage. There are many advantages in which the South has almost a monopoly. Every commodity in which the South has a sound economic advantage, should be produced in the South. To fail to do so is not only an impoverishment to the region, but a burden upon the economy of the nation as a whole.

It is of fundamental importance to realize that if Southern industry is to provide security for its employees, and markets for goods, that it must be profitable enough to pay good wages. In no other way can it provide markets for either its own products or for those of other regions of the nation. Yet, this is something that can never be done as long as the South remains primarily a source of raw material and crude finished products.

Its industries must be processors of high-value products. Much has been said recently of increased industry in the South. Yet, those industries are, in the main, raw material industries, or crude-finish plants, with the final and more valuable processes being deferred to the factories of other regions of the nation. The South must lay greater emphasis on the processing of goods through to the consumer stage.

Too little is known of what the Southern resources really are. If the Southern States have been thoroughly surveyed and drilled to determine their mineral resources, where they are located, their qualities, and in what quantities, it is not a matter of general knowledge. This work is just now being done in Georgia. It is up to the business men in the South to see that this job is carried through to early completion if we are to develop our mineral industries and use them for employment of our non-agricultural population.

We need to know more about the product-possibilities of our resources. This calls for increased industrial laboratory facilities, and greater familiarity on the part of business men with the information which those laboratories have to offer. In these facilities we are woefully inadequate in both equipment and personnel.

Every year, Northern industry combs the graduating classes of our Southern colleges and universities and takes away the cream of the crop, for employment elsewhere. Some of the greatest contributions to industrial economy in America, have been made by Southern boys working in Northern laboratories. Arrangements should be made by which these boys can be tooled, and compensation made sufficiently attractive to hold them here to work on our Southern problems where they have a native interest.

Business men should see that what has become known is "put to use." They are woefully ignorant about what is being found out in the laboratories of the colleges and universities of Louisiana, or Mississippi, or Georgia, or Alabama, or North Carolina, or of the other states of the region beyond what appears in the newspapers.

A great chemurgic laboratory has been recently created in New Orleans by the United States government. How many business men know what is going on over there? How many have combed the lists of product-possibilities to find out which hold the basis for profitable industry? We have read much of the achievements of Dr. George Washington Carver, the famous negro scientist of Tuskegee Institute in Alabama. We read that he has developed 285 new products from the peanut, and 118 from the sweet potato. How many Southern business men who have a stake in the economy of the South have combed the lists to determine the ones of important industrial and commercial value? It is on the basis of such discoveries as these that the most stabilized and most profitable industries of the region will be built.

These men are making valuable contributions to new economic frontiers, and new security for employment and individual enterprise. Their possibilities should be familiar to all business leaders who are in position to influence the flow of capital investment.

Some means should be found for attracting a larger flow of local capital into profitable Southern enterprise. As long as the South functions primarily as a source of raw materials for, and receives its capital from other regions, it will stand as an economic colony to those regions, and be subject to policies frequently of an exploitative character. It is therefore exceedingly important that more Southern capital be employed in Southern business. It promotes economic independence and stability for the region, and stabilizes its tax and other public policies. Largely in local capital will be found the multitude of small industries which are indispensable if the economy of the region is to be made secure.

Southern investors have hesitated to invest their funds in Southern undertakings because of the degree of risk involved. This element of risk can be greatly reduced by more thorough information as to nature, cost and location of resources, labor, transportation, products, markets, etc., and capital would undoubtedly be less hesitant to move in.

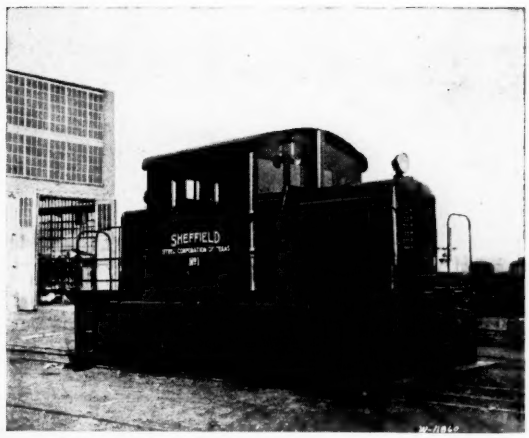
The prosecution of the war has made it necessary for government to construct a large number of war industries throughout the region. The close of the war will make the continued operation of most of

(*Continued on page* 48)

NEW EQUIPMENT LOWERS COSTS— PAYS DIVIDENDS

Uninterrupted service and greater operating efficiency combined with a reduction in maintenance costs will lower your cost per ton haulage. Whitcomb locomotives are powered for rapid acceleration enabling the hauling of heavier loads in a given time or the same loads in less time. Because of their rugged construction yet simple design, the average mechanic can take care of any necessary adjustments.

We build these power units from 1¾ to 90 tons. We'll be glad to tell you where you can see one in operation.



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Subsidiary of ROCHELLE, ILL. THE BALDWIN LOCOMOTIVE WORKS

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GRATING & TREADS

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CHICAGO
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New Methods and Equipment

"Super Sight" Adapted to Industrial Use

Four new models of "Super Sight" adapted to close inspection, small parts assembly and precision machining, are announced by The Boyer-Campbell Company, Detroit, Mich. These include No. 95ZC with two magnifying lenses, the top one 5 inches and lower one 4 inches, lighted separately, permitting use of one or both as needed. The head is balanced to the bracket and may be instantly put in position over a wide bench area. No. 89ZC model has one magnifying lens, 5

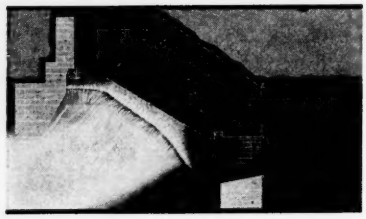
inches in diameter, with head balanced to bracket, enabling its use also over a wide bench area, adapted for inspection, small parts assembly and bench work. Model No. 89U has one magnifying lens, 5 inches in diameter, fitted with safety lens to protect magnifying lens when required, and is equipped with universal brackets. It is designed for precision machining. Model No. 447C has one magnifying lens, 4 inches in diameter, head balanced to bracket, and may be used in any position over a wide bench area, for bench work and small parts assembly.

Carey MX Granules for Extinguishing Magnesium Fires

The development of a new product known as Carey MX Granules for reducing losses incident to magnesium fires, is announced by the Philip Carey Mfg. Co., Lockland, Cincinnati. Control of magnesium fires with MX Granules is declared to be simple and effective, tests showing that when spread over the fires, these granules soften and seal the burning magnesium with an air-tight blanket, cutting off the oxygen supply and quickly extinguishing the fire. Magnesium incendiary bombs may be handled effectively in the same manner. Tests on the product have been made by the Underwriters' Laboratories, Inc.

American "Self-Cleaning" Stoker

The American Coal Burner Company, Chicago, Ill., announces a line of "Self-Cleaning" hand-operated stokers for changing over boiler installations formerly dependent upon fuel oil, or on fuels threatened with scarcity at the present time. This new stoker employs the original "Cokal" firing principle — a cok-



American "Self-Cleaning" Hand Operated Stoker

ing method well known to combustion engineers for its ability to produce smokeless and efficient combustion with inexpensive sizes and grades of bituminous coal. The stokers are designed for operation with natural draft and require no steam or electric power. Sizes range from 100 pounds to 4,000 pounds of coal per hour.

Du Pont Emergency Fire Truck

Compactly laden with more than 50 tools, a specially designed hand truck of "fire buggy" has been developed by E. I. du Pont de Nemours & Company, Wilmington, Del., for use in its Wilmington buildings. It is four feet long, mounted on wheels and easily moved by one man. The

truck carries an assortment of tools ranging from five types of fire extinguishers to a jack capable of lifting three tons. Plans to enable industrial firms, institutions, office buildings and interested organizations to construct and equip an identical emergency truck will be supplied upon request to the Office Building Division of the Du Pont Company.

Use of RECO Color Hoods in Blackouts

Providing a dim colored light without penetrating to the street, enabling one to see his way about, RECO Colored Hoods, manufactured by the Reynolds Electric Company, Chicago, are declared to solve a problem that confronts hotels, restau-

Reco Color Hoods Provide Lights in Blackouts

rants, stores, offices, public buildings, institutions, etc., during blackout periods. May be slipped over ordinary light bulb. Lights covered with Color Hoods should be on a separate circuit to burn when principal lights are shut off. They are also used as warning and signal lights and can be equipped with flasher for blinking and coding.

Eyeshield For Protection of Welders' Eyes

Designed to protect the welder's eyes during operations other than welding, a new eyeshield easily attached to any popular type helmet is announced by Jackson Products, Detroit, Mich. It tends to eliminate reflected glare, affords wide vision, and protects the eyes from flying

Eyeshield Easily Attached to Any Type Helmet

scale, while loading of welding holder, set-up work and other details may be accomplished without raising the visor. Of light green, the shade fits the face comfortably and may be worn over prescription glasses. At ease, the welder can raise the protective visor, but a quick flip downward causes it to resume its protective position.

AVOID HEAT-FAG··USE
MORTON'S
SALT TABLETS

SALT LOSS *Slows Up Production*

SALT lost by sweating must be replaced or workers tire quickly — accuracy and alertness are dulled. Lowered efficiency, mistakes and accidents take their toll.

MORTON'S *Salt Tablets*

Install Morton's Dispensers by all drinking fountains, so workers can take tablets to replace the salt lost by sweating.

ORDER NOW!

Salt Tablets Case of 9000 $2.60

Salt-Dextrose Tablets Case of 9000 $3.15

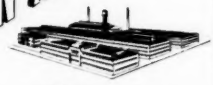
Dispensers

500-tablet size
$3.25

1000-tablet size
$4.00

MORTON SALT CO., Chicago, Ill.

RIGHT DOWN OUR PRODUCTION ALLEY



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Stewart has enormous manufacturing and ample shipping facilities for production runs of units or parts of units fabricated from angles, flats, tees, rounds, squares, sheets, strips, and plates involving the use of equipment listed at the right.

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ANGLES · FLATS · ROUNDS · SQUARES · TEES · STRIPS · SHEETS · PLATES

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1963 Stewart Block
Cincinnati, Ohio

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Last Longer and Work Better

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Instructions

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POOR PATTERNS
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POOR CASTINGS.
RESULTS
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THAT PROFIT LEAK
by
Installing Modern
Woodworking Machinery

BUILT BY

J. A. FAY & EGAN CO.
Cincinnati, Ohio
Since 1830

Industrial News

Ryerson Steel Has Grown With the Years

In November Joseph T. Ryerson & Son, Inc., Chicago, will celebrate its 100th anniversary.

Joseph T. Ryerson, coming from a long line of ancestors prominent in the development of the steel and iron industry of the East, came to Chicago in 1842 and established the Pittsburgh Iron Store, serving as his own receiving and shipping clerk, salesman and bookkeeper.

The Pittsburgh Iron Store, as the city grew, developed into a nation-wide organization with 10 key-city plants measuring floor space in acres, spur trackage in miles, and annual shipments in thousands of tons.

The history of the company is virtually the history of steel. It occupies at present a 21-acre site at 16th and Rockwell Streets, Chicago.

Edward L. Ryerson, grandson of the founder, is Chairman of the Board and also Chairman of the Board of Inland Steel Company, now its parent company. His brother, Joseph T. Ryerson, who served as president of the Ryerson Company during the first World War, continues as a director of Inland Steel, of which Everett D. Graff, a former Ryerson Company executive, is president.

American Manufacturing Co. Appoints Advertising Manager

F. L. (Skip) Tebbetts has been appointed advertising manager by the American Manufacturing Company, Brooklyn, N. Y., operators of cordage mill, succeeding James J. Lowe, now an ensign in the United States Navy.

Purchasing Agent of Jones and Laughlin

F. W. Ochsenhirt, Jr. has been appointed to the new position of General Purchasing Agent of the Jones & Laughlin Steel Corporation, Pittsburgh, Pa. W. A. Morris, Jr., assistant, has been made purchasing agent.

TENTS
TARPAULINS
WINDBREAKS
ROAD MATS
CONTRACTORS' SUPPLY DEALERS in every state sell the Fulton line. Specify SHUREDRY and FULTEX Tents, Tarpaulins, and Windbreaks — anything made of canvas. Fulco Road Mats and Burlap. If dealer cannot supply you, ask our nearest plant for catalog
write for Prices
Fulton Bag & Cotton Mills
Manufacturers since 1870
Atlanta St. Louis Dallas Minneapolis
New York New Orleans Kansas City, Kan.

Mass Production of Industrial Haulage Vehicles

Deliveries will meet schedules and the material handling problem will be greatly reduced by a mass production system installed by Clark Tructractor, Battle Creek, Mich., Division of Clark Equipment Company. Assembly lines that carry complete equipment for the speed up of production enable the company to hold to delivery schedules that were impossible to meet under ordinary manufacturing procedure.

H. K. Clark Again in War Work

H. K. Clark, vice president and general manager of Norton Company, Worcester, Mass., manufacturer of grinders, who recently returned to Worcester after nine months' service as a Dollar-a-Year man in the OPM and WPB, lastly as Assistant Deputy Director of the Division of Industry Operations, is back in Washington. This time he has been "drafted" by the Navy and, with the rank of Lieutenant Commander, is a member of the Army and Navy Munitions Board.

Westinghouse Moves X-Ray Division to Baltimore

Removal of the entire manufacturing plant and administrative offices of the X-Ray Division of Westinghouse Electric and Manufacturing Company from Long Island City to Baltimore is announced by Walter C. Evans, vice president. Administrative offices and 135 employees moved to Baltimore last January to formulate plans for the manufacturing plant.

Additional employees to the number of 350 will be required. Production will include equipment for making X-Ray and fluoroscopic pictures, surgical lamps and all types of therapeutic equipment.

Vice President of Arco Company Now Air Force Captain

Paul L. Hexter, vice president of the Arco Company, Cleveland, Ohio, and responsible for the development of the company's infra-red-reflecting camouflage paints and its paint-mixing machine, has been commissioned a Captain in the Army Air Force.

Du Pont Production at All-Time High

President Walter S. Carpenter, Jr., of E. I. du Pont de Nemours and Company, Wilmington, Del., announces that production is at an all-time high. Plant expansion on an unprecedented scale, largely constructed and operated for the account of the government, has involved expenditures of several hundreds of millions of dollars. Every construction project has been completed in advance of contract schedules, and similarly, all production schedules have been met or exceeded.

Fairbanks-Morse Appointments

Robert H. Morse, Jr., branch manager successively of the Cincinnati, Dallas and Boston offices of Fairbanks, Morse & Company, Chicago, was recently appointed Assistant Sales Manager with A. C. Dodge, Vice president and Sales Manager, at Chicago. John Elmburg, formerly Manager of the Diesel Engine Department at St. Paul, Minn., has been made Manager of the Boston branch to succeed Mr. Morse.

Trade Literature

CLEVELAND CRANE AND ENGINEERING PRODUCTS IN WAR WORK—
Official Publication—"Cleveland Crane . . . Graphic," Volume 1, No. 2, illustrates and describes installations of products in various phases of war work and in different plants.
The Cleveland Crane & Engineering Co., 1129 East 283rd St., Wickliffe, Ohio.

BEMIS RIP-CORD CLOSURE—
Folder—illustrating and describing Bemis Rip-Cord Closure for textile bags, which is easy to apply, opens instantly, and is declared to save bags, labor and storage.
Bemis Bro. Bag Co., 431 Poplar St., St. Louis, Mo.

HOW THE STEP-VALVE WORKS—
Bulletin 426—illustrated, telling how the Step-Valve used in Milton Roy Pumps is designed for specific purposes, and also how it functions in pumping against pressures up to 20,000 lbs. per square inch and in handling such materials as butadiene, salt slurries, fibres in suspension, acid sludge, etc.
Milton Roy Pumps, 1300 E. Mermaid Ave., Chestnut Hill, Philadelphia, Pa.

DIGGING AND HANDLING MATERIALS—
Bulletin A 294—"Speed Production Now," illustrated, showing how industries are speeding the digging and handling of materials, with action views of Traxcavators and Pipe Layers solving tough problems in many industries.
Trackson Company, Milwaukee, Wis.

FOR PRODUCTION OF ESSENTIAL WAR MATERIALS—
Folder—illustrating and describing Johnstone machines, including Uniform Tension Unwinder; Combination Double Winder with Score or Shear Cut Slitters; Drum Rewinder, etc.
Johnstone Engineering & Machine Co., Downington, Pa.

ELIMINATING HEAT LOSSES—
Folder—"More Heat—Better Heating at Lower Cost From Your Present Boilers," illustrated.
J. O. Ross Engineering Corporation, 350 Madison Ave., New York, N. Y.

WANTED

An Enterprise Adversely Affected by the War Effort

Must have reasonable expectation for full recovery after the war. Prefer agricultural producer, processor of agricultural products, or related lines. In preliminary correspondence, it is unnecessary to disclose the name or exact location of such enterprise, but, to warrant consideration, information should be supplied as follows:

Type of organization *(corporation, partnership, etc.)*
State in which located
Type of operation
Average and most recent annual sales and profit or loss
Approximate present-day value of capital assets
Amount of working capital
Total liabilities which must be assumed, by general classification
Lowest cash selling price.

All replies will be treated in strictest confidence by our client. Address:

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208 South La Salle Street Chicago, Ill.

WORTHINGTON PUMPING EQUIPMENT—
Bulletin W-111-B31—illustrating and describing Worthington Horizontal Single Piston Pumps, Type AC, Valve Plate Type Pressures to 250 P.S.I., for general service; Bulletin W-205-B5A—devoted to Worthington Steam-Jet Ejectors, Type CTH, Double Element, Two-Stage, with combined surface inter-condenser and after-condenser.
Worthington Pump and Machinery Corporation, Harrison, N. J.

HOBART PRODUCTS IN WAR AND PEACE—
Booklet—20 pages, explaining and illustrating products, manufacturing and engineering facilities, making up the Hobart Group of factories.
Hobart Brothers Company, Box EWS3, Troy, Ohio.

PRODUCTION FOR THE WAR EFFORT—
Office Publication—The Bulletin, July 1942, featuring a front-page article on "The Ladle of Freedom Produces to Reduce The Axis," published in cooperation with employees of—
The Youngstown Sheet and Tube Company, Youngstown, Ohio.

TEMPERATURE CONTROL—
"Wheelco Comments," Volume 1, No. 7, illustrated, featuring Wheelco temperature control instruments in unusual temperature control application designed to maintain even heat throughout regardless of heat losses at the doors. May be applied to many types of furnaces and ovens.
Wheelco Instruments Company, Harrison and Peoria Streets, Chicago.

GRINDING, LAPPING AND SURFACING MACHINERY—
"Grits and Grinds," for July 1942, featuring the second of two articles on the subject of "Gear Tooth Grinding" by A. Rousseau, of the Norton Company Sales Engineering Department. The publication is an attractive piece of literature and is published monthly by—
Norton Company, Worcester, Mass.

"The Organization and Training of Industrial Fire Brigades"—published by S. C. Toof & Company, Memphis, Tenn., covering a subject of vital interest at this time, outlining a program for the protection of business and industrial establishments. Price $1.00 per copy. Quantity discount to fire departments and others in industrial fire brigade training activities.

"Procedure Handbook of Arc Welding Design and Practice," published by Lincoln Electric Company, Cleveland, Ohio; 1308 pages, 6 by 9 inches, 1810 illustrations, including photos and drawings; price $1.50.

ELECTRONIC CONTROL FOR RESISTANCE WELDING—
Booklet B-3102-38 pages, illustrated, presenting a simplified explanation of electronic control for resistance welding, pointing out the different kinds of resistance welding that can be done, the function of the various controls and the degree of accuracy made possible by electronic control; publication also includes three pages of application data on the choice and application of a-c single phase resistance welding control, with other useful data and information, available from any Westinghouse District Office.
Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa.

How Much Longer Will You Keep IDLE MACHINERY?

It should be moving out. Never has used machinery been in such demand. It may never happen again. Seize the chance. Advertise it. Many are doing so.

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FOR MANY YEARS we have helped industry by furnishing reliable surveys on industrial locations in the Seaboard Southeast.

MORE RECENTLY we have likewise assisted numerous Government agencies by supplying authentic reports on various parts of our territory.

OUR PRIME OBJECTIVE:—To contribute to our Country's war effort in every possible way until victory is won.

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WARREN T. WHITE
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Producers and Manufacturers of
GEORGIA MARBLE
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MODEL LAND COMPANY
Flagler System St. Augustine, Florida

We have helped

many businesses that have brought us their financial problems.

Correspondence invited.

BALTIMORE COMMERCIAL BANK
GWYNN CROWTHER, *President*
BALTIMORE, MARYLAND

Member Federal Reserve System
Member Federal Deposit Insurance Corporation

A Challenge to Business Leadership in the South

(*Continued from page* 42)

these industries for war purposes unnecessary. That will mean idle plant facilities, and large numbers of unemployed population in these areas. Every one of these situations should be surveyed for their maximum value in conversion to peace-time production. This is undoubtedly a job which should fall to private enterprise.

The South should recognize the fact that the economy of war is revolutionizing industrial processes from the ground up. Pre-war technique will not be the precedent for post-war processes. In foods, for example, while in pre-war times vegetables were put up in tins, in post-war they may be frozen or dehydrated. Food processors should be on guard against complete obsolescence, and on the alert for new processes.

The manufacturer of cast iron stoves would do well to consider whether wider use of electric power, aluminum castings, etc., might not make his pre-war processes completely obsolescent—and whether he should now be looking into new fields. No man can say that he will be manufacturing the same product, using the same material, or operating in the same location in post-war as in pre-war years.

New materials, new designs, market changes, transportation changes, etc., may be expected to work many radical changes in manufacturing procedure and location. Because of the great expansion in the production of aluminum, magnesium, plastics, and other substitutes for steel, and the influence which airplane design will undoubtedly have on automobile design, and other factors, we cannot say that the automobile, or the products of other large industries, which were torn from their foundations for war production will be manufactured in pre-war locations or use pre-war processes.

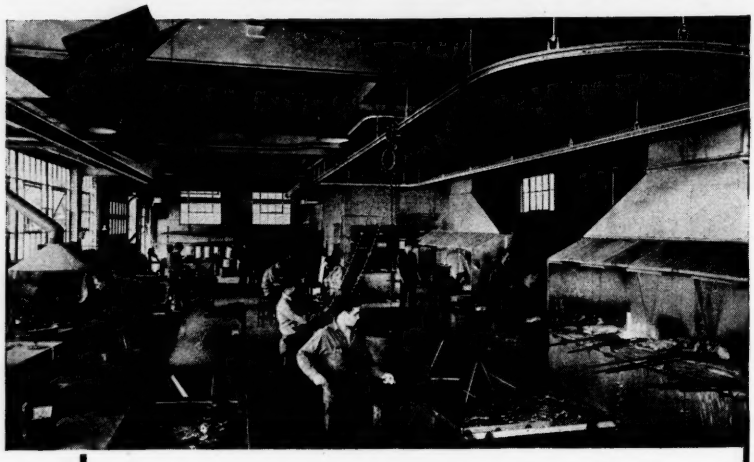
The most economical locations for rebirth of many of these industries may be entirely away from pre-war locations. Location of aluminum, magnesium, plastics, power, markets, and other factors may completely change the pattern of industrial geography. The business man of the South should consider seriously the region's responsibilities and opportunities in the case of such eventualities.

With the coming of peace, one of the most urgent, and most important problems will be that of housing facilities. It is largely up to business enterprise in America to decide whether this job will be done by business men or by government. In other words, will businessmen be builders of homes, or will they be administrators of housing projects?

The time is right for business leadership in the South to begin some coordinated plan of positive action. Just what form such action will take is a problem that must be solved by the cooperative action of Southern business men.

There should be some kind of a permanent region-wide council of business men to serve as a clearing house of ideas and information on these issues. There should be some kind of a vehicular organization to study and inform business men on the needs and possibilities of the region. This council, or organization, should have facilities or means to promote investigation

LET SKILLED HANDS DO REAL WAR WORK



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for new products, and to comb the laboratories for practical ideas that can be transmitted to businessmen for implementing into action. It should be of such strength that it can take a new agricultural crop of demonstrated possibilities such as soy beans, sweet potatoes on a tonnage basis, peanuts, tung trees, and others, and work out a 3, 4 or 5 year program and see it through to successful conclusion.

It presents a problem of real organization and will take the highest and most positive type of business leadership that the South affords. It will take money, and a lot of it. But when we consider again the needs of the devastated countries of the world—the possible impact from both at home and abroad upon our own civilization if we fail—and the great benefits to the social and economic welfare of the region, and the contribution to maintaining free enterprise if we win, it will be worth many times the price.

*This article was adapted from a speech delivered recently in New Orleans before a group of business men brought together by A. B. Patterson, President of the New Orleans Public Service, Inc., to consider post war repercussions upon free enterprise, and the responsibilities of business in the South toward meeting the issues involved.

Airplane Parts Firm Cuts Accounting Costs

(*Continued from page 32*)

ately available at the payment date and can be paid without further verification.

Distribution of invoices to expense account columns (See Figure A) as a part of the regular posting routine is one of the most important time-saving features of Thompson's entire plan. Another significant advantage is that totals by due date groups are printed on the invoice register, making the latter form a complete, accurate auditing record.

As due dates arrive, invoices and vouchers are taken from the files and forwarded to the posting machine. This time, using the voucher as the media, checks are written and in the same operation a check register is created. (See Figure B.)

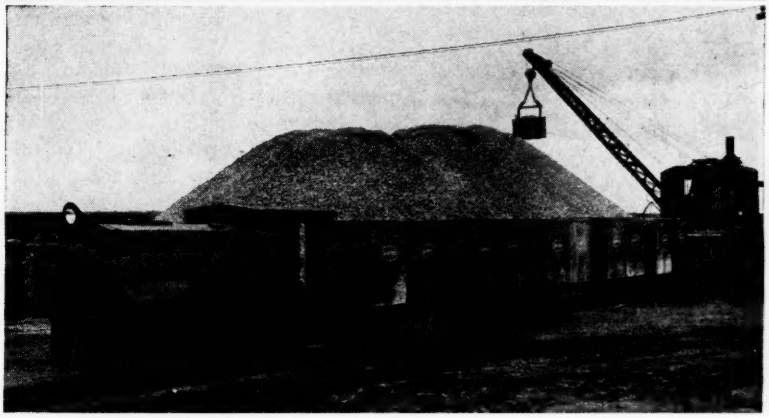
Typing the voucher number, vendor's name and the date, the operator enters and prints the amount of the check. The check number is then typed on the register following which the amount is distributed as a credit to the appropriate bank and discount accounts and as a debit to accounts payable.

Again, distribution of the amounts as a by-product of the daily postings saves an extra, time-consuming operation.

Check postings must agree with a pre-list of invoices, thus providing a second control over accounts payable postings.

Checks are totaled by payment groups (automatically accumulated classification totals indicated in Figure B) on the check register, so that by checking check register payment group totals against invoice register payment group totals, all vouchers are automatically audited, making it unnecessary to check postings individually. Maintaining invoices in fixed control groups makes it possible, if group totals balance, to know that every invoice previously registered has been paid and that the correct amount has been paid to each vendor.

Mountains of Material
MOVED FAST WITH PLYMOUTH



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War Uses of Farm Products

(*Continued from page 25*)

ing. Our chemists and cotton technologists are also working with various chemical treatments and fabric designs to see if it will be possible to develop an unlined cotton fire hose to replace hose formerly made of linen, where the pressures are comparatively low. If these efforts are successful, this country will not only be able to lick the rubber problem as it applies to fire hose, but another step will have been made in finding new and wider uses for farm crops.

Until about a year ago there was a great deal of discussion about the future of the whole cotton industry. Because of low prices and mounting surpluses, the outlook was not very encouraging. But the war has changed the appearance of the picture almost over night. Instead of the low prices that existed 18 months ago we are now enjoying the most favorable prices that we have had in years, with domestic consumption at the highest level in history, and some people feel that because everything is all right now, our cotton troubles are over.

But that is not the case. In my opinion, the temporary relief and prosperity that we are now enjoying is like a shot in the arm the effects of which will die out when the war is over. So instead of relaxing and feeling that our troubles are over I believe that we should take advantage of the present favorable situation by pushing constructive *research* so that the throne which has been recently threatened by paper, rayon, and other synthetic fibers will be made safe for King Cotton.

Naval Stores

We now come to another industry—that of naval stores; decidedly Southern, and one whose products have served in war and in peace since Colonial days. In the early days its principal product—pine pitch—was considered indispensable for caulking ships. Today the raw materials are rosin and turpentine almost entirely. Their derivatives figure prominently in war materials. Thanks to turpentine and a farseeing synthetic chemical industry, we can now get *synthetically* the camphor we need for smokeless powder, plastics and other requirements.

The supply of palm and coconut oils from the Pacific Islands is also shut off and fats and oils available for soap stock are steadily decreasing. We need fear no serious soap shortage, however, for we can look to rosin to supplement our soap stock. As the Bureau of Agricultural Chemistry and Engineering has shown, rosin is not a filler, but when judiciously used with soap oils, it will actually make a good soap.

Today the pine resin, or "pine gum" as it is called is still converted into but two raw materials —rosin and turpentine. The natural resin complex, consisting largely of terpenes and diterpene —mono-carboxylic acids, while it is unlike coal tar, in that it comprises non-benzenoid or hydroaromatic compounds, is, like coal tar, destined to become a source for a host of valuable chemicals—chemicals which are not only important in the present emergency but which may play an important role in the post-war economy of the South.

Tobacco

One of our investigations which may prove to be of considerable economic importance centers around an attempt to produce nicotinic acid, now called "niacin," on an economically commercial basis from nicotine.

The aim is to try to produce the nicotinic acid from a type of tobacco known as Nicotiana Rustica which is not used for smoking and which contains more nicotine than the smoking varieties. This species is capable of producing two or three times more nicotine per acre than the ordinary varieties, and we are hopeful that this thing can be worked out so that it will become economically profitable for the small tobacco farmer to produce a nicotine crop as a supplement, replacement, or cash crop.

There are now two rather substantial outlets for nicotine. One is in the food reinforcement field after the nicotine has been converted into niacin, and the other is its use as an insecticide. It is estimated that we now need about 200,000 pounds of niacin annually to enrich our flour, and another 20,000 pounds for use in pellagra treatment. Niacin is sometimes called the P.P. or pellagra-preventing vitamin. This suddenly large demand for niacin is twenty times larger than the total amount of niacin produced in 1940, and would require around 20 million pounds of tobacco were all the acid made from tobacco nicotine. At present, coal tar competes with nicotine from tobacco as a source of niacin.

Corn, Wheat, etc.

A short and economical process for making butylene glycol, a relatively rare chemical with several important commercial uses, has just been announced by one of the Regional Research Laboratories. The new method involves the fermentation of plentiful farm crops, such as corn and wheat.

Butylene glycol may be used in making anti-freeze for automobile radiators and in the production of commercial solvents and has a number of industrial chemical applications for war industries.

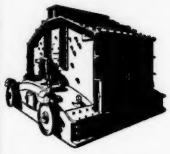
The laboratory is also studying butylene glycol as a possible link in the production of butadiene for synthetic rubber. Three steps would be involved in the production of rubber from agricultural crops by this method—raw material to butylene glycol, butylene glycol to butadiene, and butadiene to rubber. The final step—production of synthetic rubber from butadiene — is, of course, already known. Considerable interest has been shown by industry in the fermentation process for producing butylene glycol. The major problem remaining is reversion of butylene glycol to butadiene on a commercial scale.

Chemists at the regional laboratory have succeeded in producing excellent yields of pure butadiene from corn-made butylene glycol in the *laboratory*, but they have not as yet developed the process to a pilot-plant scale and they are not making any definite predictions until this has been done.

Although chemistry's efforts to meet the rubber shortage center mainly on producing a synthetic product from such large-scale raw materials as grain and petroleum,

(*Continued on page 54*)

"PENNSYLVANIA" CRUSHERS



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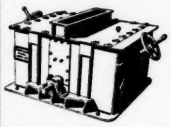

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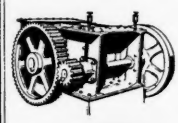

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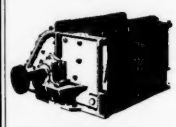

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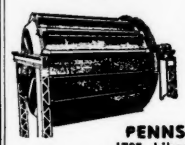

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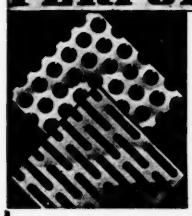

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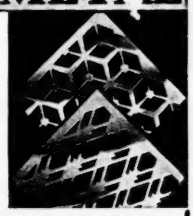

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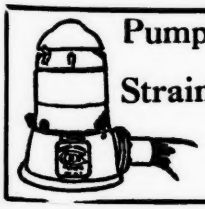

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and Water Systems
Pump Jacks and Centrifugal Pumps

Subcontractors Wanted

(*Continued from page* 38)

boring 5¾", cross boring for Engine Shaft 2.41". Necessary equipment or equivalent; Lathe, Drill Press, Broaching, Threading, Tapping, etc. Prime contractor will furnish material.

Ref. Cruse-45-1

A Penna. firm wishes to locate subcontracting facilities for TRACK LINKS, Model 6.B., size approximately 7" x 6" x 9" weight 15# estimated. Materials, to be furnished by bidder, are 1045 SAE Steel Forgings. Number of parts required is 500 to 1100 per day, production to be as soon as possible. Priority rating: A-1-A or AA. Equipment needed is: 4000# Hammer, 1¼ Drill Press, and Milling Machine.

Ref. Cruse-45-2

The Government requires subcontracting facilities for 2000 DOGS, S. B. G. M^{k} III B, size 10 x 5 x 2½ and weight 8#. The material, to be furnished by bidder, is Nickel Chrome Molybdenum Steel. Required equipment: 2000 lb. Drop Hammer, Engine Lathe, Milling Machine, and Drill Press. Production is to start as soon as possible. Priority rating is A-1-a or AA.

Ref. O'Hara-45-1

A New York manufacturer requires subcontracting facilities for welding and machining 4.7" WELDED STEEL GUN CRADLES. Overall length, 131", 40" wide by 32" high. Assembly weight 3200 lbs. Cradles are built up of Steel Bars, Plates, and two Steel Castings welded together. Welding Assembly requires Flame Cutting, Welding, X-Ray, Magnaflux, Stress Relieving Furnace, and Sand Blast Equipment. Machining requires open side Planer, Vertical Miller, Horizontal Boring Mill with 3" bar, and 4' Radial Drill. Total number wanted, 400. Delivery to start in November. Prime contractor will assist in layout and inspection requirements.

Ref. Thompson-45-1

A Penna. concern is seeking subcontracting facilities for GAGE & FIXTURE WORK, sizes small. Material required is Cast Iron, C.R., and Tool Steels, to be furnished by subcontractor. Quantity: 500 (varied quantities of each). The equipment necessary for this work is as follows: Milling, Drilling, Lathe, Grinders (Surface, Cylindrical, Internal, Surface and Centerless), Heat Treating. Production to start as soon as possible. Priority rating—AA.

Ref. Van Valkenburgh-45-1

A New York manufacturer requires facilities for finishing complete SMALL PRECISION PARTS, largest about 2" diameter x 2½" long. Large quantity urgently required. Facilities should be Automatics or Turret Lathes, Gear Hobbers or Cutters, Heat Treating and Precision External Grinders. Tolerances close, contract by negotiation.

Ref. Cruse-46-1

The Government wishes to locate subcontracting facilities for 15,000 sets of PONTOON COUPLINGS. Materials to be used: Forgings and Plate Steel. Equipment needed: Drill Press, Threading, Shearing, Forming (Bending) Welding, Milling. Required as soon as possible. A-1-a to AA priority.

Ref. Cruse-46-2

The Government is seeking subcontracting facilities for 5 sets of GAUGES, JIGS, TEMPLATES, INSPECTION TABLES. Materials: Various Steels. Equipment Needed: Milling, Lathe, Drilling, Profiling. Required as soon as possible. A-1-a to AA priority.

Subcontracts Wanted

MO-2. Tobacco Mfr.

16 in. swing, 5 ft. between centers, LeBlond Lathe, in good condition, that will work to a .001 tolerance; Universal Cincinnati #2 miller with index head, in good condition, that will work to a minimum tolerance of .001 inch; Barnes #23 Vertical Drill Press, 20 in. from column to center, that will work to a .005 tolerance; Canedy & Otto #29 Vertical sensitive press, 5 in. from column to center, that will work to a .001 tolerance; Gordon #.047 vertical sensitive press, 7½ in. from column to center, that will work to a .001 tolerance; Barker & Chard crank shaper, 16 in. stroke with vise, that will work to a .001 tolerance; several hydraulic presses, 12 x 12, with a 16 in. lift, on which can be applied a pressure of 3000 pounds.

G-5. Furniture Manufacturers

Boring machine, double spindle vertical; band saw, 25"; band saw, 36"; trim saw, 16"; cut off saw; hand turning lathe, 36"; belt sander; Pearson pump sander; carving machine, single spindle; jointer, 12"; jointer, 2"; Onsurb router, 265 heavy duty, vacuum pulley drive; small portable router; planer, single head 24"; dido saw, 1¾.

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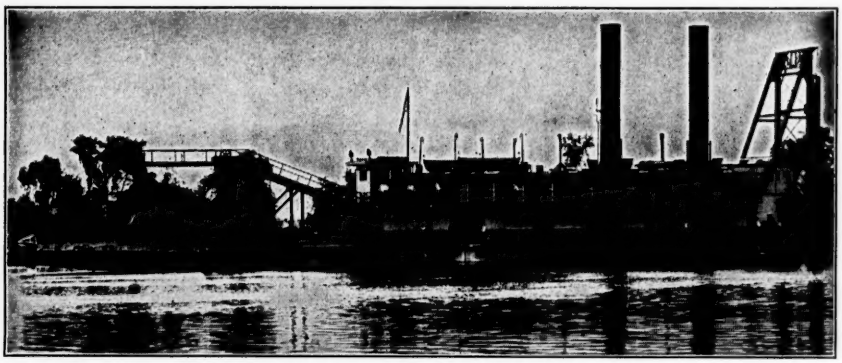

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A Pledge Fulfilled

(*Continued from page 23*)

handle the movement of 5¼ million men in uniform, not counting the hundreds of thousands that have traveled on furlough. Burden after burden — and all handled without serious congestion or delay, *in addition* to adequate service for all the traffic of agriculture and commercial industry and all the civilians who had to travel from here to there. Truly, the railroads have kept their pledge. And sincerely, they intend to keep that pledge, come what may, if it is within the power of men and machines to keep it!

That is the epic story of the American railroads in World War II. That is the story, too, of the railroads that serve the great Southland; a story that is heavily underlined in the South by the location in that rich territory of so many training camps, military establishments and war industries; by the great volume of traffic moving through the South Atlantic and Gulf ports; by the endless procession of tank and coal cars carrying fuel to the East through and from the Southern states.

Some idea of the preparations made by the Southeastern railroads to meet these pressing and unprecedented demands for rail services may be gained from these facts:

From January 1, 1938 to April 1, 1942, these railroads spent $352,762,374 for additions and betterments to their property. In addition, they authorized more than $95,500,000 for the same purpose.

In the same period they purchased or rebuilt 442 freight and passenger locomotives; 83,641 freight cars; and 509 passenger cars.

In these months they have ordered or laid 793,904 gross tons of rail; put in more than 37,000,000 cross ties; and tamped down 15,786,559 cubic yards of ballast.

Thus, in tangible terms, we can record the fact that the railroads of the South are continuously "preparing today for the traffic of tomorrow." Thus, in terms of achievement, we can record the fact that the railroads of the South are helping to fulfill a solemn pledge to the American people—"to meet to the full the demands of commerce and the needs of national defense."

War Uses of Farm Products

(*Continued from page 50*)

the Regional Laboratories are also working on so-called rubber substitutes and rubber extenders. Substitutes would be useful for many products that do not have such huge and exacting requirements as tire manufacturing. Extenders could be mixed with natural rubber to reduce the amount of the latter required.

At the Peoria, Illinois laboratory, chemists working with such farm products as soybean oil and corn oil have produced materials that look, smell, and feel much like natural rubber.

Some of these products will stretch 200 per cent or more and return to their original forms, and show tensile strengths of approximately 500 pounds per square inch. The general run of natural rubber has a 600 per cent stretch, and a tensile strength of 3,000 pounds or more. But a substitute that is only a fraction as strong and elastic is entitled to be called promising for some purposes. Most of the work so far has been on a laboratory scale, but some of it is being tested in the pilot plant. If this proves satisfactory, the next step would be commercial trials.

This new substitute material can be made from cottonseed oil and from peanut oil, both of which can be produced in large quantities in the great southeastern area of the United States which is served by the MANUFACTURERS RECORD.

I've only touched on a few of the more important research projects now under way in the four Regional Research Laboratories, but I've tried to give enough information about each project to enable the reader to get an idea of the type of work that is being done. I have tried to point out that our research is closely linked up with National Defense, and that we are pushing it as hard as we can in the hope that our contributions will help this country in our all-out fight for victory and freedom.

America Produces Tanks

(*Continued from page 29*)

The first heavy tank was delivered December 8, 1941 — the day after the attack on Pearl Harbor. Its 56 tons is hell in motion.

Besides tanks themselves, the Army uses many tank chassis to mount field guns. Development of this type of mover makes it possible to give artillery a mobility unheard of in the last war. Tractor-type mounts are built with the same precision that makes our tanks unequalled and come from the same production lines.

Expansion of Alumina Production Recommended

Production of alumina, raw material from which aluminum is made, from low grade domestic bauxite and from clay, heretofore little used for aluminum metal, has been recommended to the War Production Board by the Advisory Committee on Metals and Minerals of the National Academy of Sciences.

Use of a proposed new process by the alumina plants in the country will make it possible to include a substantial quantity of clay with the bauxite feed, so that less bauxite will be needed and the limited domestic reserves conserved.

The Committee reported on the results of a year's study of possible new sources of alumina from clay, tailings, high-silica bauxite, alunite, kaolin clay and the like.

Principal source in the past of low-silica bauxite, preferred material for the production of alumina has been Dutch Guiana, Arkansas supplies the remainder. Submarine warfare threatens the amount of flow from Dutch Guiana and Arkansas high grade deposits are limited, particularly in the face of the greatly expanded demand for aluminum for war use. Thus the report explores the possibilities of expanding domestic alumina production from other sources.

Alumina is aluminum oxide. The current method, called the Bayer process, for producing it is to treat low-silica bauxite with alkaline solutions which remove the greater part of the alumina. The tailings, containing iron, titanium and silicon compounds, are known as "red mud." The committee has found that treatment of this red mud by a recently developed sintering process will result in the recovery of substantial amounts of alumina. This process will permit the production of alumina from high-silica bauxite as well as from current accumulations of red mud.

(*Continued on page 59*)

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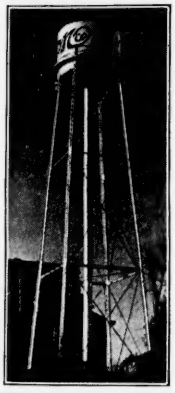

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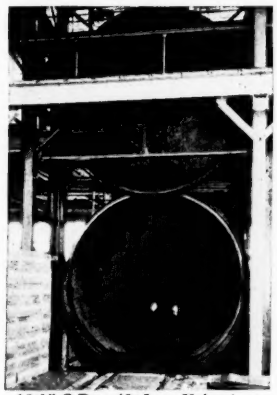

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New Industrial Plants and Expansions in the South

(*Continued from page 37*)

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MISSISSIPPI

Buildings—War Department announced award of contract to Black & Veatch, 4706 Broadway, Kansas City, Mo. for architect-engineer services for construction of temporary frame buildings; supervised by Vicksburg Engineer Office.

Building—War Department announced award of contract to Charles T. Main, Boston, Mass. for architect-engineering services for temporary frame construction; supervised by Vicksburg Engineer Office.

GREENWOOD—plant—Caldwell Concrete Pipe Co. of Jackson, leased portion of building for manufacture of concrete pipe.

NATCHEZ—tire plant—Brice Building Co., 215 S. 18th St., Birmingham, Ala., low bidder for construction of tire plant for Armstrong Tire & Rubber Co.; 2-story and basement; 334x130 ft.; reinforced concrete; James T. Canizaro, Archt., Lampton Bldg., Jackson.

MISSOURI

Plant—H. A. Buehler, of Rolla, Mo., John R. Keyes, WPB manager of Tulsa, Okla., interested in establishment of sponge iron plant to cost $4,000,000 to be built in St. Louis area.

KANSAS CITY—addition—North American Aviation, Inc. reported plans enlargement of bomber plant at cost of $3,000,000.

ST. LOUIS—expansion—Pomona Pump Company of Pomona, California, leased building, 2625 Locust St., will merge with present building at 2621 Locust St.

ST. LOUIS—wall paper plant—Royal Wall Paper Co., northwest corner of Seventh St. and Lucas Ave., leased building, 605-11 Franklin Ave.; will occupy after alterations have been completed.

ST. LOUIS—sponge iron plant—Report has been submitted to War Production Board recommending establishment of sponge iron plant for St. Louis.

OKLAHOMA

HENRYETTA — addition — Eagle Picher Mining & Smelting Co., B. A. Troutman, Supt., erect $600,000 addition; increase production of plant by 25 per cent.

SOUTH CAROLINA

SPARTANBURG—finishing plant—Whitney Manufacturing Co., V. M. Montgomery, Pres., plans converting mill into finishing plant; installing machinery in mill.

TENNESSEE

ATHENS—chair plant—Pratt Chair Co., located at Calhoun, Tenn., leased Prather Bldg., N. Athens for chair plant; operate as Athens Chair Co., Floyd Pratt, Pres.

COOKEVILLE—shoe plant—J. W. Carter & Co., C. A. Goding, Pres., L. & N. R. R., Nashville, establish branch shoe plant in Cookeville; repair and recondition building; additional output 4000 pr. shoes daily.

KNOXVILLE—expansion—Electro Manganese Corp., E. M. Wanamaker, Pres., Proctor St., plans doubling existing capacity in fabrication of materials; plant is under supervision of Cincinnati, Ohio, office of Ordnance Department; will install additional machinery; erect some buildings.

TEXAS

Plant—War Department authorized construction of expansion to manufacturing plant in Texas; supervised by Denison District Engineer Office.

Pipe line—Sinclair Refining Co., 123 E. Noble St., Oklahoma City, Okla., having survey made for 17-mile, 4-in. pipe line from pump station in Hill County, near Bowie, use reclaimed pipe.

DALLAS—pipe line—Texas Pipe Line Co., B. E. Hull, Pres., will build an 8-in. pipe line from Texaco West Dallas refinery to Tulsa and Cushing, Okla.; line will double capacity of present line between the above points; will use for crude oil.

GALVESTON—ship yard addition—Todd Drydock Co., Inc., received only one bid for ship yard addition Pelican Spit; Texas Gulf Construction Co., 2008 S. Wayside Drive, Houston, was the bidder for electric shop, pattern shop, compressor house, main store room, brass foundry, etc.; George Rustay, Archt., Electric Bldg., Houston.

GALVESTON — power line — Houston Lighting & Power Co., Houston, will install a 12,000 volt submarine power cable across Galveston channel to Pelican Spit; cable will be laid in connection with city water mains and will furnish reserve supply of power for industries; application filed with War Department for permit.

HOUSTON—pipe line—United Gas Corp., applied for permit to install and maintain 4-in. gas pipe line under and across Bayou Teche.

HOUSTON — plant — Nyotex Chemicals, Inc., reported, acquired Pioneer Lime Co. with plant and site of 5 acres on Green's Bayou with capacity of 50 tons of lime daily; Nyotex Chemicals, Inc. is composed of several major chemical companies, including Consolidated Chemicals Industries, Inc., Petroleum Bldg., which company is planning erection of a $5,000,000 chemical plant on 32-acre site; engineers now preparing plans.

PORT ARTHUR—butane products plant—Lummus Co., 420 Lexington Ave., New York, general contractor for plant of Neches Butane Products Co. receiving bids on foundation sub-contracts; estimated cost of plant, $40,000,000.

VELASCO—styrene plant—Dow Chemical Co., Midland, Mich., changed site of proposed $18,000,000 styrene plant from Port Neches to Velasco.

WEST VIRGINIA

Plant—War Department authorized expansion of manufacturing plant at cost of more than $3,000,000; under supervision of U. S. Engineer Office, Huntington.

CHARLESTON—addition—Capital Iron & Metal Co., acquired site on Pennsylvania Ave. for expansion; erect warehouse.

HUNTINGTON — expansion — Huntington Precision Products Corp., north side of Washington Ave. between W. 14th and W. 15th Sts., plans expansion of recently completed plant.

SOUTH

Jesse Jones, Secretary of Commerce, announced that Defense Plant Corp. will purchase for $1,200,000 a 195-mile, 8-in. pipe line from American Liberty Pipe Line Co., Dallas, Tex.; will relay pipe across Florida; cost of moving line approximately $2,900,000; will have capacity of 35,000 bbls. daily.

New Priorities In Effect

(*Continued from page 40*)

Tea—M-111-d increases quotas in 204 counties in 42 states beginning August.

Tire Machinery and Equipment—L-143 prohibits all production and delivery unless specifically authorized: use forms PD-552 and 553. L-143 Amend. #1 permits building, repairing and delivery until Aug. 3.

Toiletries and Cosmetics — L-171 places control over production. L-171 Sch. #1 classifies all products into three lists and specifies production or sales permitted for each classification. L-171 Sch. #2 limits each product except perfume, to not more than three consumer sizes of containers.

Tools, Machine—L-147 prohibits production calling for special electrical specifications after July 15. E-1-b Int. #3 clarifies delivery date as affected by Prior. Reg. #12.

Track-Laying Tractors and Auxiliary Equipment — L-53-b places restrictions on production and distribution of repair parts.

Utilities (Maintenance, Repair and Supplies)—P-46 Amend. #2 permits utility company to sell materials from excess stocks to any other utility company provided order carries rating of A-5 or higher. P-46-a permits utility companies to make extension to facilities for Army, Navy or Maritime Commission upon direct order by them.

Wood Pulp—M-93 Int. #1 clarifies certain points with regard to administration. Use forms PD-290, 291 and 292.

Wool—M-73 (as amended for period 8-3-42 to 1-31-43) extends order six months and increases amount of woolen cloth to be made for civilian use. M-73-a (as amended 4-27-42) Amend. #2 releases control over clothing for young boys (sizes 2 through 6) to L-85.

Zinc—M-11-b provides long list of articles in which zinc cannot be used effective Sept. 1. Use form PD-500.

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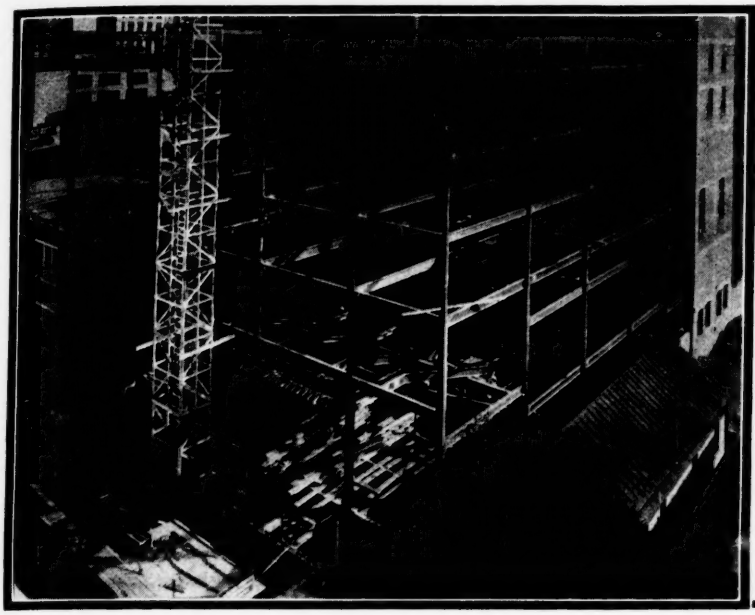

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Roscoe Arant,
Regional Business Consultant
United States Department of Commerce
Atlanta, Georgia.

MANUFACTURERS RECORD
Baltimore, Maryland

Expansion of Alumina Production Recommended

(*Continued from page 54*)

Of the several proposals to produce alumina directly from clay without the Bayer process, the committee looked with favor on a sintering process known as the modified Pedersen process, and recommends the construction of a test plant for the purpose.

Continuation and expansion of the current pilot plant operations around the country, such as those being operated by the Bureau of Mines and by Kalunite, Inc., in Utah, are urged.

Finally, the committee said, "because the best raw material for the production of aluminum is bauxite, it is suggested that the prospecting program for the discovery of new domestic deposits be prosecuted vigorously and that the known domestic deposits be appraised as to grade, tonnage and minability."

Zinc Pilot Plant to be Built in South

Paving the way for development of large, untouched reserves of domestic zinc ores for use in the Nation's war machine, the Bureau of Mines will establish a $350,000 pilot plant and laboratory to conduct commercial scale tests of a gas reduction process developed by the Bureau for production of the critical metal zinc.

The pilot plant, which probably will be built somewhere in the South-Central section of the United States, will have an output of 500 pounds of metallic zinc daily. Funds for construction of the research plant have been provided in the First Supplemental National Defense Appropriation Act, 1943, approved by Congress and just signed by the President.

Representing a distinct departure in metallurgical processes for treatment of zinc-bearing ores, the Bureau's war program plant method uses a natural gas —methane—in several stages of a reducing cycle from which ore concentrate emerges as high-purity zinc. Natural gas frequently occurs near areas which are rich in zinc-bearing ores but which are removed from adequate supplies of electrical energy, coal or coke.

Experiments by Bureau metallurgists indicates that only five cubic feet of natural gas are necessary to produce one pound of zinc and that as much as 95 per cent of the zinc can be extracted from the ore by the new process. The scientists have estimated that the amount of fuel required to produce a pound of zinc by using the natural gas reduction method is approximately one-half that needed in commercial furnaces using coal and coke.

Bureau engineers also believe that the construction cost of commercial-size furnaces using the natural gas reduction process would be much smaller than the outlay for electrolytic zinc plants and would compare favorably with the cost of building other types of metallic zinc plants.

Four principal phases compose the Bureau's process. At the outset, zinc concentrate is roasted in a pre-treatment furnace to remove undesirable sulphur. The ore then is placed in a retort; methane is added and the retort is heated with methane burners. Zinc vapor then forms and is condensed into zinc metal.

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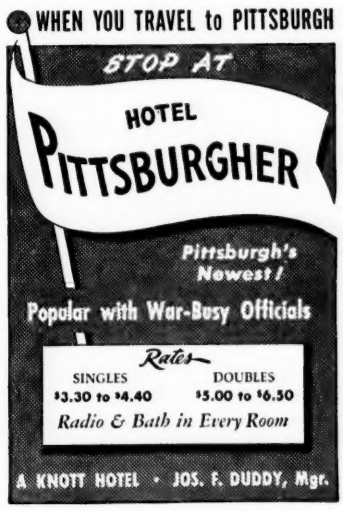

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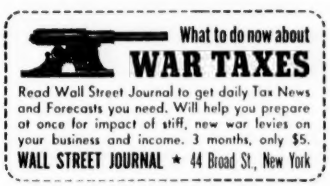
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FIRST MACHINERY CORP.
819-837 E. 9th St., N. Y. C.

ABSOLUTE AUCTION SALE COMPLETE SAW AND PLANING MILL, MONDAY, AUGUST 24th, 1942, BEGINNING AT 10:30 A. M., UPON THE PREMISES NEAR FAIR BLUFF, NORTH CAROLINA.

We will sell at absolute public auction For Cash on Monday, August 24th, 1942, commencing 10:30 A. M., upon the premises located about two miles in an Easterly direction from Fair Bluff, North Carolina, upon the Fair Bluff-Chadbourn Road, a complete saw and planing mill plant now under operation, including all machinery, equipment, tools and supplies. The principal items consisting of the following:

1 Yates-American Type "A" 20 Ball & Roller Bearing, Belt Driven Planer and Matcher, size 15 x 8 complete with countershaft, having tight pulley, drive, six knife round top and bottom cylinders with double profilers.
1 Automatic knife and head grinder, Yates-American, several pairs of side heads, line shafting, pulleys and belts of different sizes.
1 No. 94 Berlin Planer and Matcher, square heads, counter shaft for belt drive.
1 Woods Automatic Feed Table.
1 Tower Double Enf Trimmer.
1 Electric Swing Cutoff Saw.
1 Mershon 6" Resaw.
1 Rip Saw, Self feed.
1 60 H.P. Steam Engine for Planing Mill.
1 Steam Engine for Planing Mill.
1 Moore Dry Kiln with Circulator Fans, 20' x 110'; Dry Kiln Trucks.
1 Steam Engine for Dry Kiln. Conveyor Chains for loading lumber on dry kiln trucks, with electric Motor attached.
1 No. 1 Lane Saw Mill, ball and roller bearing.
1 Sauls Twin Steam Feed.
1 Edger.
1 50 H.P. Steam Engine Saw Mill.
1 Slab Conveyor for Saw Mill, with upright engine.
1 170 H.P. Boiler, installed new in September, 1940, complete with fronts, grates and stack.
1 125 H.P. Boiler, complete with fronts, grates and stack.
9 Steel New Idea Lumber Wagons. Several Lumber Buggies.
2 Model "A" McCormick-Deering tractors on rubber.

ALL ITEMS WILL BE SOLD SEPARATELY, but the owner reserves the privilege of offering the entire Mill for sale AS A WHOLE. The premises including all structures thereon are available at a reasonable rent and anyone purchasing the entire plant will have the privilege of leasing the premises. In the section where this Mill is located there is a considerable quantity of standing timber and this Mill can be operated at a profit. This is an excellent opportunity for anyone desiring to purchase any Saw or Planing Mill machinery for present plants or desiring to go into the Saw and Planing Mill business. All of this property may be inspected any time prior to the sale by any interested persons upon application to the Undersigned/or by presenting themselves at the plant location.

VALENTINE AUCTION COMPANY, AUCTIONEERS
P. O. Box 1041 **Wilson, North Carolina**

ELEVATED TANKS — WANTED —

ALL KINDS

25,000 to 250,000 Gal. capacity.

H. & P. MACHY. CO., 5819 Enright, St. Louis

WANTED
Elevated Steel Water Tank

Capacity 30,000 to 50,000 gallons complete with tower. Must be in good condition. Advise what you have and price.

THE CORBITT COMPANY
Henderson **North Carolina**

WANT TO PURCHASE

Iron and Steel material and equipment; Industrial plants; Mills, railroads; trackage, etc. Write, wire or phone.

SONKEN-GALAMBA CORP.
108 N. 2nd St. **Kansas City, Kans.**
We buy and sell. Get our quotations.

AIR COMPRESSORS

New and remanufactured
All makes and sizes
Write for Bulletins 1000 and 1042

AMERICAN AIR COMPRESSOR CORP.
Dell Ave. & 48th St. **North Bergen, N. J.**

Modern AIR COMPRESSORS

ALL TYPES AND SIZES

Correctly Rebuilt

Guaranteed

EARL E. KNOX COMPANY
12 WEST 2ND ST. **ERIE, PA**

STEEL TANKS --- PUMPS

22,000 gal. Tank on 44 ft. Tower.
35,000 gal. Tank on 90 ft. Tower.
50,000 gal. Tank on 100 ft. Tower.
3—20,000 gal. Horizontal oil Tanks.
6—11,000 gal., 12—5000 gal. Horizontal Tanks.
3—500—750 & 1000 GPM Steam Underwriters Fire Pumps.

Tanks and Pumps Bought and Sold

R. C. STANHOPE, INC.
60 E. 42nd St., New York, N. Y.

USED TANKS For Sale

3—Riveted Steel Digesters 8' Diameter, 32' high, ⅞" Plate.
12—Riveted Steel Diffusers 9' 8" Diameter, 24' 6" high, ⅜" Plate.
In Good Condition.

Savannah River Lumber Corp., Savannah, Ga.

MACHINE TOOLS

BORING MILL—7'-10' Betts, extension type, 2 heads.
GRINDER—8" x 30" Landis, cylindrical mtr. dr.
GRINDER—#3 Bryant, Internal Chucking.
LATHE—26"-50"x18' McCabe, 2 spindle, belt drive.
LATHE—21"x10' LeBlond, q.c., mtz'd.
LATHE—21"x8' LeBlond, 2.c., mtz'd.
SHAPER—24" Cincinnati, belt dr.
SHAPER—16" Smith & Mills, back geared, belt dr.
SHAPER—16" Barker, single geared, motorized.
SHEAR—Smith, triple comb. belt, 2x2x¼ angles.
TURRET—2"x24" Jones & Lamson, geared head.
TURRET—2"x24" Greenlee, belt drive, motorized.
PLANER—24"x24"x6' Wheeler, belt drive, 1 head.

AIR COMPRESSORS

503' Ingersoll-Rand, 14x10, ER.
368' Ingersoll-Rand, 12x12, ER.
368' Chicago-Pneumatic, 12x10, NSB.
311' Ingersoll-Rand, 12x8, ER.
215' Ingersoll-Rand, 10x8, ER.
173' Ingersoll-Rand, 9x8, ER.
140' Gardner, 8x6, Duplex.
92' Ingersoll-Rand, 7x6.
42' Gardner, 4½x4½.

MANY OTHER SIZES IN STOCK

THE O'BRIEN MACHINERY CO.
113 N. Third St. **Mar 0727** **Phila., Pa.**